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Rail Road News.

Noble Act of a Girl.

An incident has been related to us exhibiting unusual thoughtfulness and caution, if not heroism, on the part of a young girl, that deserves more than a passing notice. A few evenings ago, just after dark, a young female residing on the Railroad, near Sykesville, observed that the rain had caused a part of the embankment to give a way, and entirely cover up the Railroad track. Knowing that the train of cars would pass along in a short time, she hastily and alone procured a light, and set to work to remove the obstruction. In a few minutes, however, she heard the train approaching at a fearful rate, and abandoning her humane effort to clear the track, she took her station in the middle of the road, and by waving the light to and fro, succeeded in attracting the attention of the Engineer, who immediately stopped the engine. In a few moments more, had it not been for the great presence of mind, courage and thoughtfulness, of this young girl, the whole train might have been dashed to pieces. Her noble conduct is deserving of the highest reward.—[Balt. Clipper.

Important Decision.

The Supreme Court, in session at Saratoga, have decided that the Northern Railroad Company are entitled to receive subscriptions to their capital stock. The case upon which the decision was made was the Company versus. James Duane, and is a reversal of a decision made in the same case, says the St. Lawrence Republican, in the courts in this county about a year ago. A number of cases were pending on the result of this case, which settles the question unless carried to the Court of Appeals.

Injuries by Locomotives.

The Commitee on Agriculture, of the House of Assembly of New Jersey, has reported a bill to prevent injuries by locomotives, which requires the railroad companies to separate their tracks from public highways by a fence, whenever they run beside each other. In default, the company is liable to pay the amount of damages, and a fine of $50 besides.

The Worcester Railroad Corporation has applied to the Legislature of Masachusetts for an increase of capital of $500,000, which will raise the capital to $5,000,000. This with the sale of property worth $300,000, is expected to relieve the Company from debt.

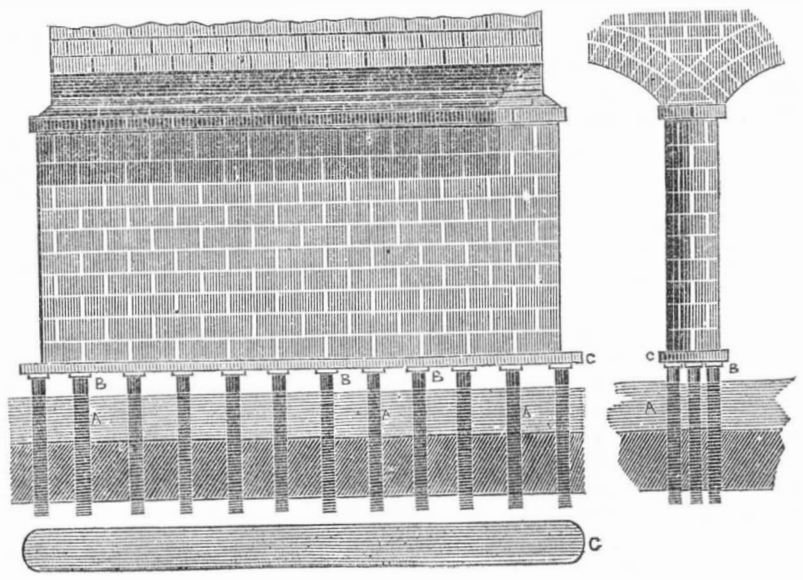
It is estimated that the depression of Railway property in Great Britain, in 1849, is not less than eighty millions sterling, $400,000,000.

The receipts of the Syracuse and Utica Railroad during the year 1849, from passengers and all other sources, is about $465,000.

The receipts on the Syracuse and Auburn Road, very nearly reach $200,000.

A brass rudder has been cast in Philadelphia for the steamer Columbia. It is sixteen feet long, three feet and three inches wide in the blade, and weighs nearly 30 tons.

POTTS' PNEUMATIC PILE DRIVING FOR FORMING FOUNDATIONS, FOR PIERS, EMBANKMENTS, &c.



On our list of Patents, this week, there will be found one to Mr. Potts, of England, for forming foundations, &c., by a new plan for sinking tubes, caissons, &c.

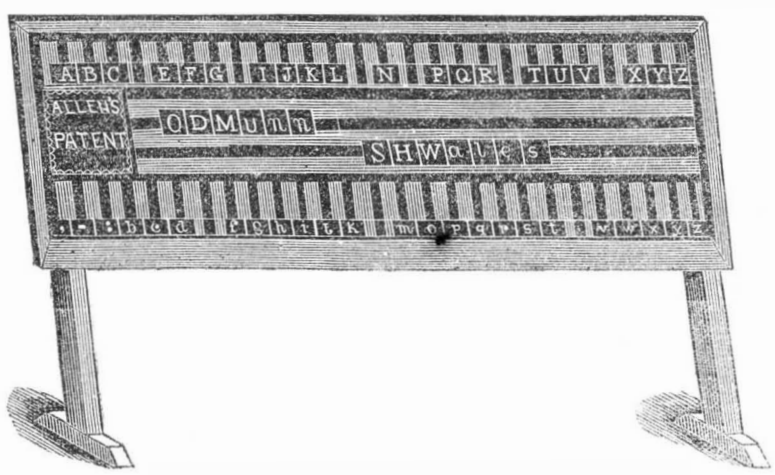
The proprietor of the patent for the United States, is Mr. Charles Pontez, No. 71 Cedar, street, this city.

This engraving represents a pier supported on pneumatic sunk piles laid down by Robert Stevenson, Esq., C. E., on the Chester and Holyhead Railway. The Viaduct is skew and carried over a branch of the sea in the island of Anglesea. It consists of two land piers built in the usual way, and of the centre pier laid on a sand bank. It is thirty-six feet long and three feet wide, built on nineteen cast iron tubes, A, each 16 feet long and one foot diameter. The piles were sunk by means of 2 small double air pumps with cylinders 4½ inches in diameter and 17 inches stroke, worked by four men. The pumps were placed on the land piers and a lead pipe of half an inch bore was carried from the pumps, across the water to the place of driving. Each tube was placed perpendicularly over the spot in which it was to be sunk, and the square iron cap, B, placed on the top, with the lead pipe mentioned, passing it. At every stroke of the pump the air was exhausted from the inside of the tube, and as the exhausting process proceeded, the pile made its way downwards until it sunk to the depth required. When the whole of the nineteen piles sunk to one level as shown in the engraving, a cast iron plate, C, weighing nineteen tons, was placed on them on a level above the water, and formed the base on which the superstructure was built. The arches are 20 feet wide on the square end, and 26 on the skew. The pier is three feet wide on the square, and three feet ten inches on the skew. The pumps were brought down by wagon, put together, worked, and sent back again in a few days, so that nothing cumbrous in the way of the application of this principle is involved.

The pier represented above was built by Frank Foster, Esq., C. E., so well known as the assistant of Mr. Stevenson. It has stood for two years, and it has every appearance of standing for generations. Letters (*p. p.*) addressed to Mr. Pontez, will meet with prompt attention.

As this is a very interesting subject to our Civil Engineers, and therefore of great importance to the whole Republic, we will explain the principle more fully in another article next week.

ALLEN'S ALPHABETICAL, SPELLING, READING AND ARITHMETICAL TABLE.--Fig 1.



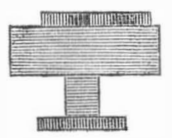
This Table consists of a board or table, along the centre of which are horizontal grooves, or raised ledges forming grooves between them, that connect with perpendicular grooves, or compartments on the sides, in which are inserted an assortment of movable blocks on the face of which are cut the letters of the alphabet, both capitals and small, the nine digits and cypher, and all the usul pauses and signs used in composition and arithmetic.

The letters, figures and signs are large, so as to be readily recognized by all the members of a large class, and from even the extremity of a large school-room, and are so assorted and arranged as to be easily slid from the perpendicular grooves or compartments into the horizontal grooves, and there combined into syllables, words and sentences, or used in simple arithmetical operations. When the lessons in the alphabet, spelling, reading, composition or arithmetic, is finished, the blocks can be returned to their appropriate places.

The experience of many teachers in schools of different grades, and of mothers at home (the God-appointed school for little children, next to which should be ranked the well-organized Primary School, with a bright, gentle, affectionate and patient female teacher,) has demonstrated that by accustoming the child, either individually or in a class, to select letter by letter, and move them from their appropriate case to the centre of the board, and their combining them into syllables and words, a knowledge of the alphabet, and of words, is acquired in a much shorter time and in a much more impressive and agreeable manner, than by any of even the best methods now pursued.

All of the advantages derived from the method of dictation, and the use of the slate and black board, in teaching children the alphabet, spelling, reading, and the use of capital letters and pauses, as well as the elementary principles of Arithmetic, such as numeration, addition, subtraction, &c., can be secured by the introduction of this Table into our Primary and District Schools.

Fig. 2.



The letters do not come off, but have tennons on their lower ends, fig. 2, to slide in the grooves, and can be moved to any part of the board.

The inventor is Mr. Edwin Allen, of Windham, Conn. Mr. H. Taft, of No. 155 Madison-st., is sole Agent for the city of New York.—The following certificate will show how highly it is esteemed:—

Having examined the ingenious and useful Educational Table of Mr. Allen, for Primary Schools, and had a full explanation of its various uses, I am satisfied that it will be found a great aid in elementary instruction. The principles involved in its use, are both correct and practical.

S. W. Seton,
Supt Public Schools, New York City.

Departure of the Arctic Discovery Ships.

The sailing of a new Arctic Expedition in search of Sir John Franklin and his gallant companions, took place from London on the 11th inst. The expedition consists of the Enterprise, Captain Collinson, and the Investigator, Commander McClure. The best wishes of mankind go with them. They went to Davenport to await final orders.

The Enterprise and Investigator, arctic discovery ships, are both now complete, as far as their repairs and fitting are concerned, and have been taken into the river to receive their stores, which are daily arriving from Deptford. They are fully rigged and ready for sea. Application has been made to the A[illegible]ty for permission to enlarge the magazines of both vessels, in order to enable them to carry a large supply of powder, it being intended to have recourse to that substance in getting out of the ice, in preference to the old and tedious process of sawing.

If there ever was a subject in which insanity could be distinctly traced, in the constitution of different British Cabinets, it is certainly that of a Northwest Passage to the Pacific. There is not a single working man, of the least common sense, without any more education than barely to write his own name, but knows that the discovery of such a Passage, if it does exist, would not be worth a straw to the commercial world.

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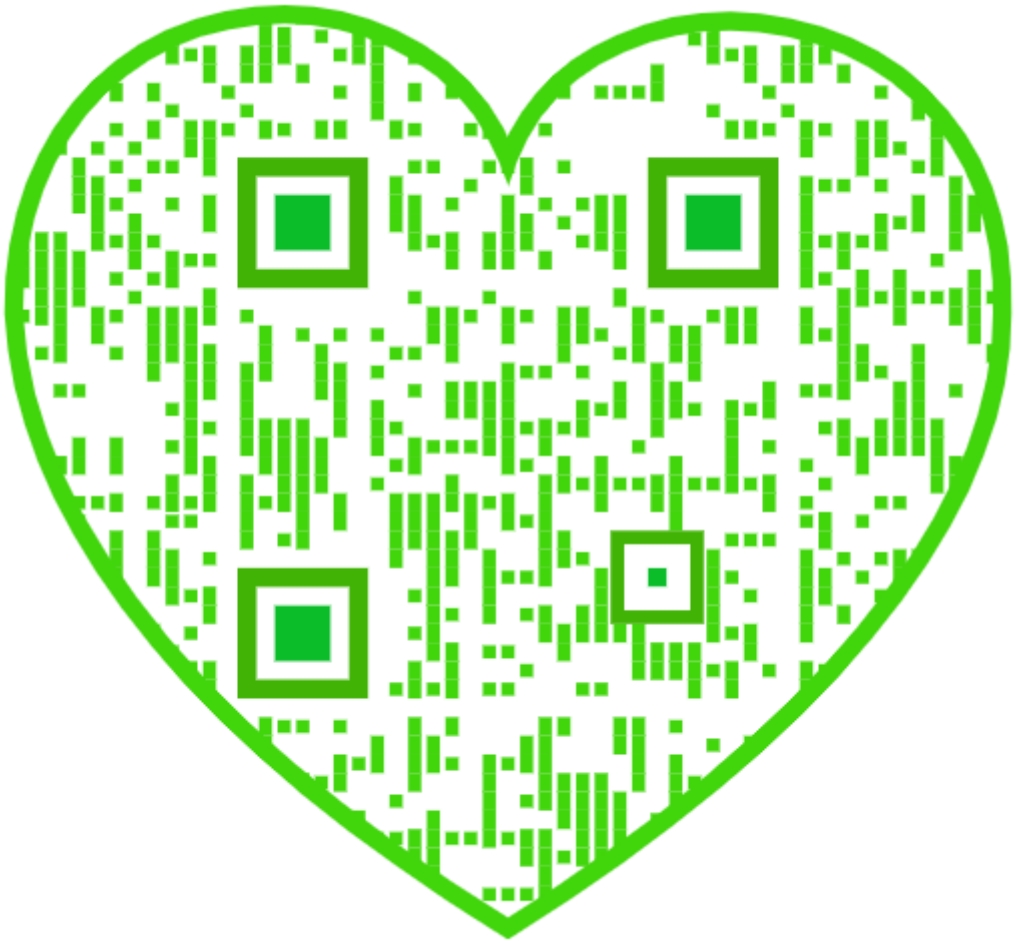

Miscellaneous.

Correspondence of the Scientific American.

WASHINGTON CITY, Feb. 1, 1850.

Aside from the public buildings, and the usual interest existing here during the Session of Congress, Washington possesses very little attraction to the stranger, and it is a matter of surprise to many that so little attention was paid to the arrangement and location of the various buildings devoted to the transaction of the governmental business. In one place we find the General Post Office—a fine marble structure,—in an other, the Patent Office, the monument and store-house for the genius of the country, and at some distance from these are located, in beautiful irregularity, the State, Treasury, War and Navy Buildings. It may justly be called the City of "Magnificent Distances." No person should visit this city without paying a lengthy visit to the Patent Office, for it is here that we find collected, in countless forms the result of American ingenuity and skill.

We are forcibly reminded here of the causes which spread civilization and comfort around us, rendering the name of our country the theme of admiration to the world. I am informed that the Patent Office contains nearly 15,000 models of various inventions, many of which are highly wrought specimens of mechanical skill.

I would here suggest, as a matter worthy of reflection, that the mass of our people are apparently insensible of the long, wearied and *deep* research which has attended the results here developed, while at the same time they are in full participation of their blessings. Very few of the worthy inventors who have contributed to this vast collection, have been rewarded proportionate to the value conferred by them upon the community.

It would require thousands of pages to furnish even a condensed description of all the different inventions found in this office. I have heard something said in relation to the publication of all the patents that have been granted, but such an undertaking would be attended with an enormous expense, and amount to the work of years. An incomplete history would be of very little importance to the great mass of inventors, and it may now be regretted that Congress did not, at the foundation of the Patent Office, appropriate a sufficient sum for the yearly publication of each invention complete, abstracted from the drawings and specifications furnished by the applicant.

I coincide with many of the views entertained by Commissioner Ewbank, and would rejoice to see meritorious inventors rewarded by an appropriation of a stipendium from the revenue of the office, for their valuable inventions. This, I believe however, would be attended with many disadvantages, and it would be difficult to select out of such a noble host a few names without inflicting a sting upon the balance, for it is a well-known fact that all inventors regard their inventions as superior to any other.

I should say more upon this point, but I observe that you have treated the subject properly, and with a due regard to the best interests of inventors.

I am opposed to the appropriation of twenty or thirty thousand dollars for experiments out of which no scientific mechanic can ever expect a beneficial result. The finale of all such schemes are so well understood, that I need not refer to an isolated case as an example.

The upper story of the Patent Office is occupied by the National Institute, for the depositing of geological and other curiosities, I noticed in one case the original Declaration of Independence, the coat, vest and breeches worn by Gen. Washington when he resigned his Commission at Anapolis, in 1783; also his camp chest and fixtures. It also contains the minerals of Smithson, collected from various portions of the world—curiosities from Egypt, deposited by Geo. R. Gliddon, Esq.; Japanese frock and knit gaiters of cotton, of various colors—beautifully made baskets from the Tonga Islands—specimens of bitumen; sulphur, indigo, and the other fruit from the Dead Sea, deposited by Mr. Lynch,—bones of the enormous Mastodon found in Missouri in 1843. Another object of rare interest is the old printing press of Dr. Franklin, made more than 100 years ago. The objects of interest here found are too numerous for description in one letter.

I think Mr. Porter made a mistake when he wrote to the "Union," stating that he was authorized to announce the discovery of Mr. Paine. I have been informed from a reliable source, that no such authority was extended, and I regret exceedingly that Mr. Paine, whom I well know to be a superior mechanic, should find his invention incorporated into a scheme for navigating the air—an old worn-out hobby. Mr. Porter might fly about here a little for the amusement of our people, but I hardly think he will ever reach California mounted on the back of Mr. Paine's discovery.

The Report of Mr. Ewbank is spoken of very highly here, he pays a just and merited tribute to the inventor, and I regret that speculations have been made by some of your papers in regard to his confirmation: I believe he is one of the most useful officers ever placed at the head of this department, and so will prove himself. W——s.

WASHINGTON, February 5, 1850.

I understand that the Committee of the House have already drafted some important amendments to the Patent Law, but owing to the slavery question, which bids fair to absorb everything else, there appears to be no probability of any attention being paid to scientific matters. Those who are depending for aid from Congress to complete their inventions may as well go home.

Prof. Johnson concluded his course of lectures on Agriculture, at the Smithsonian Institute, on Saturday. His instructions relative to the recovery of worn out soils, were highly interesting, inasmuch as they are especially adapted to the exhausted tobacco lands of Virginia. I see the Legislature of Massachusetts have appropriated $1200 for a course of lectures by him, in Boston.

The Patent Office has, at the present time, an unusual number of application for patents. Among them is one by Dr. J. H. Little, who claims to have invented an Electrical Engine on an entirely new plan. The Dr. hails from the Western Prairies.

Some of our money dealers have been sadly taken in by the Mormon gold coins, as there appeared no doubt of their being worth the sum stamped upon their face; but it now appears that the aggregate value of the $20 pieces is not over $17,22. The fineness is found to be 897 thousandths—silver parting 98 thousandths.

From the Annual Report of the Director of the Mint, it appears that the deposites of gold and silver at the Mint and its branches, during the past year, was $14,609,463. The deposite of gold from mines in the U. S. was $5,767,692.

A strong appeal will shortly be made to Congress on the subject of the improvement of Western Navigation, and for the amendment of the law regulating steamboats carrying passengers. During the past year, in the West, 112 steamboats were blown up, 200 persons killed, as many wounded, and a loss of two millions of dollars.

The plank road project continues to interest the people on both sides the Potomac, and by summer it is presumed we shall have at least a dozen radiating from this district.

A scientific wag of this city says he will purchase a pair of Galt's double sighted spectacles for the purpose of watching for Mr. Paine and his gas machine.

It is the intention of the Naval Committee to report a bill relative to the propriety of providing all our vessels with the necessary apparatus for producing carbonic acid gas for extinguishing fires. The materials required are a cask of common chalk at the bottom of the hold, connected with the deck by a small pipe, and a two gallon bottle of sulphuric acid, which, being poured down the pipe, will generate a sufficient quantity of the gas to extinguish the largest fire.

It is said that Government will shortly receive a rifle from an American at Berlin, made upon the plan of the new Prussian rifle, the secret of which he has discovered.

Col. Benton appears determined that the scientific world shall not be imposed upon in the matter of the "non-descript" horse alledged to have been captured by Col. Freemont,—for on his affidavit the owner has been held to bail on a charge of receiving money under false pretences.

Meredith Myers, of N. H., has applied for an extension of his patent for an improvement in Turnabouts for Railroads.

The cotton factories of Georgetown and Alexandria, filled with industrious young women and men, now work like a charm. *

[The Prussian Rifle, about which so much is said, is already patented in the United States, and is both illustrated and described on page 124 of our present volume. The owner of the patent is Mr. John B. Klein, No. 51 Laight street, this city. Our Government cannot use it without purchasing the right. We have seen this rifle with our eyes, and we must say that the American gentleman in Berlin, who has troubled himself so much as to send the said rifle here, is only sending his coals to *Newcastle*.—[ED.

Terrific Explosion of a Boiler.--Great Loss of Life.

On last Monday morning, at half-past seven o'clock, a steam boiler of 200 horse power, capacity in the establishment of A. B. Taylor and Co., No. 3 Hague St., this city, blew up, tearing the building to pieces and destroying the lives of no less it is supposed, than 70 persons, and wounding so far as is yet known, 30. The cause of the explosion, is most reasonably supposed to be, owing to a want of water in the boiler, and a tremenduous pressure of steam at that. The engineer is among the killed. The boiler was a modification of Montgomery's Patent. It was in the cellar and passed upward, carrying all before it to the top of the high six story building. The supports being thus cut away and a vacuum formed, the walls fell in with a terrific crash, burying nearly all who were in the establishment among the ruins, which at once burst into flames. It is supposed that more than 100 persons were in the building at the time, as it was a hat-body manufactory—a machine shop, and a machinery for carving wood, by Singers' Patent, as employed on the fifth story. One person who saw the building in the interval between the falling in of the walls says, that it was the most apalling sight he ever witnessed. This is one of the most heart rending accidents that has ever taken place in this city. No steam boiler should be allowed in the cellar of a building, but in a place apart by itself. It is but a few weeks since, we were in the establishment, and then we witnessed many healthy and happy-like faces, which now could scarcely be recognised as forming part of bodies wherein once dwelt a human soul. Truly there is but a step between us and the grave. Those who who have been extricated alive from the ruins, have a debt of gratitude to pay to our heroic firemen, who performed acts, which in Greece and Rome, would have covered them with chaplets. The police force and magistrates of our city, also deserve great praise, for whatever could be done by men in their capacity, was done, and done promptly and well.

Long Pent-up Fire.

The last St. Louis Republican says:—While workmen were yesterday engaged in removing the rubbish from the cellar of the building occupied by Messrs. Meech & Loring previous to the fire in May last, they discovered a mass of paper some feet under the surface, which was on fire. As soon as the air penetrated the mass it blazed up freely, having retained fire sinee the 17th of May last, a period of nearly eight months.

The Iron Buisness.

The forge-branches of ten of the great iron mills at Pittsburg are idle; and taking into consideration all who are directly and indirectly connected with them, at last 1800 operatives are thrown out of employment. An outlay of more than $18,000 a week is suspended, and both employers and employed are suffering.

Regatta in Cuba--An American Boat.

The New Orleans Picayune translates from El Redactor, of Santiago de Cuba of December 30th, an account of a splendid regatta or series of boat races which took place at that port on the preceding Sunday. There were 8 boats started for the first match; one Spanish, one American one French, manned by British seamen, one German, and the other four English. The distance rowed was two miles from the mole, and the match resulted in the American boat coming in the winner of the first prize; the French boat won the second, and the German the third. As the opinion prevailed that the advantages of position were not equal, a second match took place in the evening between the American boat and the French boat, manned by Englishmen, both rowing six oars instead of four, as at the first time. The American again proved the victor, leaving her rival a long way astern. She was a boat belonging to the brig Adele, of Philadelphia.—The same boat subsequently beat an English boat manned by Spanish sailors, making a third triumph. She was afterwards to be rowed against the French boat which on the occasion was to be manned by some of the crew of the vessel to which she belonged and to be steered by her captain.

The Royal Society of London Prize.

This Society, which has been in existence during nearly two centuries, held its annual meeting in London on St. Andrew's Day last, according to custom, and on that occasion the President, Lord Rosse, announced that Lord J. Russell had offered to place the yearly sum of £1,000 at the disposal of the Council of the Society, as a fund from which scientific men might be assisted to pursue their scientific investigations. The offer was accepted. Lord Rosse also annouced that the Copley Medal,—which is held in such honorable estimation that Sir Humphrey Davy called it "the Olive Crown"—had been awarded to Sir Roderick Murchison, for his "Silurian System;" "Geology of Russia and the Ural Mountains," and other valuable scientific productions.

Ship Building in England.

The Manchester Guardian says there never were so many English ships actually building or contracted for as at the present time, when the navigation laws have only ten days' existence before them. The unprecedented number of vessels building at Sunderland has been repeatedly mentioned in the newspapers; and we have recently heard of a gentleman who had gone to Liverpool with the intention of contracting for the building of three or four large ships; but he found all the ship-builders full of orders, and not one of them would contract, even at a high price, for a vessel to be immediately commenced.

Sub Marine Armor in the Gold Region.

Gen. S. Kimberly, now in California, writes home recounting the success he has met with in procuring gold from the beds of the rivers by means of J. E. Gowen & Co.'s sub-marine armor. On one occasion he bagged $800 in five hours, at the depth of 25 feet. In six weeks he had realized the handsome sum of $18,500.

Mechanics Wanted West.

The Batesville (Ark) Eagle says that place stands in need of a tin and coppersmith, saddle and harness maker, house, sign and ornamental painter, silversmith and chair-maker. There is also a demand for more bricklayers, stone masons, carpenters, shoe-makers, blacksmiths, house gardners, and a barber.

Building in New York.

In the last year 1495 new buildings have been erected, making an increase of upwards of 300 over the preceding year, and nearly double the number erected in 1838. Within the last fifteen years 20,000 structures have been built in this city.

Messrs. Thurston & Green, of Fox Point, R. I., have constructed two very large and fine boilers for the Bay State steamer. They measure 39 feet four inches in length, and 10 feet six inches in diameter, persenting a circumference of 32 feet. From the bottom of the boiler to the top of the steam chimney 20 feet.—Each contains 26 flues, and weighs 40 tons.

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Spiritual Knocking.

MESSRS. EDITORS—In your paper of the 19th inst., I noticed an article under this heading, wherein it was stated that Professor Loomis accounted for the noises upon scientific principles. Before a man attempts to explain such a phenomenon, he had better make himself at least slightly acquainted with the subject. It would be hard for the sounds of a waterfall to accompany certain individuals wherever they went (and with few exceptions only heard in their presence) to lay a hand sensibly upon a visitor's forehead in such a manner as to disarrange the hair, to lift up a table and move it around, or hold it down in opposition to two men endeavoring to move it; to answer great numbers of questions correctly, and many of them not asked audibly, but written, and not seen or known except by the questioner; to make a great variety of distinct sounds, but regular as the sounds made by different mechanics, or of a vessel laboring in a storm, within a yard of the hearer—which could not be made by ventriloquism. These are some of its manifestations, and are not only heard by a few ignorant persons, but by many of the most intellectual men in the country. And all concede that they cannot account for it by anything short of a spiritual agency. It has been in operation between one and two years, and subjected to the severest scrutiny, which those whom it follows do not shun, but solicit; and still not the slightest deception has been detected that I am aware of; but on the contrary, a conviction of its spiritual nature has followed investigation, and they have departed more moral and spiritually minded.

Such is a very brief view of the subject from which each one can draw their own conclusions; but let him remember that there is a possibility of not being able to account for everything upon material ground, and however comprehensive the present state of science, it is not perfect and therefore may not embrace all things. S. K. FAULKNER.

Le Roy, Genesee Co., N. Y.

REMARKS ON THE ABOVE.

We agree with our correspondent that Prof. Loomis' theory will not account for the noises in Western New York, but we have known far stranger things acconted for on natural principles, such as periodical ringing of bells and a great number of curious noises and curious things. We have not heard nor seen any of the spiritual phenomena in Rochester, but we know some men who have, such as Mr. Wm. Fisher, and Mr. R. McCallum, of Rochester, men of cool, reflective and sagacious minds, yet for all this we are perfect sceptics in any such influences, and all this proceeds from being educated with a belief in ghosts and witches. We have heard people assert that they have seen such and such fairlies, and to gratify our eyes with a sight of such things, we have ofton gone and seen—*nothing*. We bring everything to the test of common sense. Can a spirit move a table? Can a spirit knock at the door? If it could, it would surely be observable to the physical organ of vision, a thing that is impossible. We would be more apt to believe in those spirits, and those kinds of miracles, if they were sensible spirits, and performed sensible acts, but they do no such things. They prefer more nonsensical acts than McAllister, the magician, and we will stake any amount that he will beat them all hollow in performing wonderful feats, as spiritual-like as theirs. The miracles of Christ had a heavenly object in them—they were acts of benevolence, but surely those spirits that wish to gain notoriety by knocking on the floor, moving tables, and brushing a wonder-struck observer's forehead, must be foolish, trifling spirits indeed. Our experience in that line is somewhat extensive, and with our present convictions, we would believe ourselves *mad*, as soon as believe that those noises in Western New York are the effect of spiritual agencies. The tricks will yet come out, and it will be found that those noises have been caused by human agencies and those not very respectable. Many of our readers will remember the Witched Girl that was exhibited throughout our cities and villages, in 1834 we think. She was a far greater wonder than the present Western Ghost. Many people have brought forward scripture to prove the truth of supernatural agencies doing physical acts. We demur to all such use of the Scripture, so far as it relates to foolish objects. When the Bible relates a miracle, it is a sublime one. It is either the death of a host, or the act of benevolence, the raising of the dead, or the restoration of sight to the blind. There is no nonsense in that Book. No whirling of tables, no riding on broomsticks there; and this rule we may consider a good test to judge of the nature of a miracle. We have thus candidly stated our opinions respecting the noises in Western New York, being induced to do so, for a number of reasons, those principally suggested by receiving a number of communications on the subject. Time will prove whether we are correct or not.—[ED.

New Ideas on the Sugar Manufacture.—By J. Scoffern.

In the process of sugar-refining, the principal object of the refiner is to separate from the raw materials whatever impurities they may contain; but the process in its different stages is modified according to the different views of manufacturers, although the following general principles are attended to in all cases:—First, that process known by the term "blowing up." Secondly, the process of filtration through textile fabrics, and also through deep beds of animal charcoal in a granular state. Thirdly, the process of claying, as technically so called, although clay is not used for the purpose.—Fourthly, the boiling process, which is generally conducted in vacuo. Fifthly, the liquifying; and, lastly, that of drying and storing. The following is a summary of the process of refining, as conducted according to this invention. Having put the requisite quantity of sugar to be operated upon into the blow-up pan, it is to be dissolved in the ordinary manner, but omitting to mix with it the ordinary amount of "spice" (blood), and also the lime-water, and adding the lead material, the proportion of which will be hereafter explained, as also the method of preparing the same. This lead material must, however, be previously rubbed up with a sufficient quantity of hot water or syrup to produce a magma or paste. It will, however, be requisite for the manufacture to have a little experience in adding the lead material, as it wiill differ in each particular sample of sugar, therefore does not admit of laying down any exact proportion. The proportins that may be used are 40 grains of the lead material to every pound of sugar, and according as the sugar may be less pure a greater quantity of the material will be required. If the process is conducted in this manner, a good result may be insured, and the experience acquired thereby will be a standard for future operation, and the sugar might be set apart for reference, until the manufacturer is able to appreciate the relation between the characters and requirements of the several descriptions of sugar, so as properly to apportion the amount of material to be used with each for the proper separation of their respective impurities. Having determined the quantity of the lead material to be employed, heat the liquid to a temperature of about 180° Fahrenheit, allowing the sugar sufficient time to dissolve and become well incorporated with the lead material; the heat must be continued at the same degree for the space of five minutes, which will produce the desired result. The vessel with its contents must now repose for about 15 minutes, when on examination, a curdy brown precipitate may be seen gradually sinking to the bottom, leaving the liquid above in a greater or less degree of transparency; we now resort to the process known as "bag filtration," and the liquid, as it comes through the filters, is to be received into copper vessels, and it will be found that it contains a quantity of lead, which is to be separated therefrom by "gasing," which consist in passing through it streams of sulphurous acid gas, which is to be continued until it is ascertained, by testing a portion of the liquid, that no trace of the lead remains.—For accomplishing this purpose, the following plan is laid down:—Supposing the liquid in course of operation to have been the result from a solution of two parts of sugar and one of water, therefore in a viscous or syrup state, as such it is to be agitated while the gas is being diffused amongst it and after transmitting the gas for about ten minutes to a quarter of an hour, the liquid should be subjected to the test to ascertain whether it contains lead in solution. In order to conduct this operation properly the operator should have in readiness the several articles which he requires, such as two or three filters of filtering paper, each cut to a circle of five inches (that is before their formation into a cone), a bottle of hydrosulphate of ammonia (which is obtained by passing a current of hydro-sulphuric acid gas through an aqueous solution of hydro-sulution of ammonia, or an aqueous solution of hydro-sulphuric acid), a solution of sugar-of-lead of 20 grains to the fluid ounce of distilled water, test-glasses, filter-supports, a mixture of two ounces of chalk in seven ounces of water, a Berlin-ware boiling dish and a few clean straws (the straws should never be used twice). Having conducted the previous operations in the manner explained, and requiring to test the produce whether any lead is left in the sugar, we take about a fluid ounce of the liquor, which we allowed to boil over a spirit lamp, add a teaspoonful of the chalk mixture, and boil it again for five minutes, then pour the boiling liquid into a filter previously wetted with water; the liquid will at first come through so thick that to test it would be difficult, it is therefore passed through a second and third filter, but which will not render it very transparent, on account of the density of the liquor: weak liquids do not require so much filtration.

(To be Continued.)

Improved Facilities for Cultivating the Domestic Honey Bee.

MESSRS. EDITORS—As a fond reader of your scientific journal, I perceive that you are not only a friend to inventors, but are also desirous of extending to your numerous patrons, through the columns of your paper, a knowledge of the inventive progress in all arts designed to promote their interest—I therefore have no hesitancy in making a few brief remarks relative to the advancement of a certain kind of enterprize in which I, (and I trust not a few others who peruse the columns of your journal,) am deeply engaged. I allude to the cultivation of the domestic Honey Bee, and the improved facilities afforded for managing them in a recently patented Hive that has come to my notice.

Having for many years entertained a deep interest for the promotion of bee culture, I have been induced to watch closely the progress of Bee Hive improvement, and from time to time have used not less than a dozen different planned hives, several of which were my own invention. It is my purpose here, however, to mention or point out the prominent advantages only of the one above alluded to, termed the Eclectic Hive. This is constructed strictly on scientific principles, and affords a temperature in the hive, at all seasons of the year, peculiarly adapted to the prosperity of the bees. Its capacity is conveniently arranged and regulated to suit the size of any and all colonies, and encourage and promote their welfare. Ingress and egress is appropriately formed on opposite sides of the hive, graduated or closed at pleasure. Ventilation is suitably offered and easily regulated, as required. The surplus honey is conveniently removed at all times and markets. Honey, free from any impurities, may readily be obtained in small drawers, when desired. All parts of the hive allow of being removed and successively changed for renovating the comb, thereby promoting the health, activity, economy and profit of the bees. Colonies deficient of honey to winter upon, are also easily supplied with the required amount in the same condition as when removed from the hive, having it to spare. Large colonies may likewise be readily divided and thereby multiplied, by making two from one, or small swarms, at the approach of winter, united together if required; and the danger of wintering separately thus obviated.—Perfect communication and convenience for the bees through the hive, and a complete descent of all extraneous matter collected therein to the bottom board, from whence it is worked off, is also offered. The moth miller, whose depredations bees have so much cause to dread, is furthermore suitably and properly guarded against, and with a little care from the Apiarian, may be effectually excluded from the hive. Again, the robber bee is suitably and appropriately guarded against—hence the hive, being simply constructed, will, with its other qualities combined, embrace all of the advantages requisite for managing bees with ease and profit.

Now, with due respect to the inventor and the anxiety entertained for the advancement of bee culture, I will only add, that the Eclectic Hive meets my highest approval, and I would here cordially invite all scientific Apiarians, or such as are engaged in bee culture, to improve the earliest opportunity to investigate the merits of said hive, and impartially judge and determine for themselves.

Clark Wheeler, of Little Valley, Cataraugus Co., N. Y., is the proprietor of the above hive, to whom letters concerning further explanation of its merits, or purchase of rightr, (if *p. p.*) I presume will be immediately attended to. APIARIAN.

Ellicottville, Jan. 10, 1850.

The New British House of Commons.

The ceiling is divided into 18 compartments by moulded ribs, each space being again subdivided into pannels. Over the Speaker's chair is the reporter's gallery, formed like the other fittings throughout, of oak, and left of its natural color. There is a metal railing above the front of the gallery. The traceried openings seen above the Speaker's chair will be filled in with open metal-work, to screen a gallery to which ladies will be admitted. At the bar end is a much larger gallery for strangers. The floor of the House is of iron, perforated for the purpose of ventilation. The windows will be filled with stained glass; but there are no colored decorations. The length of the chamber is 62 feet, the width 45 feet; nearly one-third less in length, therefore, than the House of Lords, which has the same width and height, and is a double cube. The Commons' lobby, south of the bar, has a similarly formed ceiling, in nine main divisions. The connexion of the House of Parliament with Westminster-hall by means of an enormous archway nearly the whole height of the hall, is formed, although the steps are not yet constructed, and justifies our anticipations of its fine effect. This communicates with St. Stephen's gallery, the stonework of which is being cleaned down. The iron vaulted roof of this gallery is a fine piece of work. The restoration of the Cloisters is being proceeded with; the beauty of the old work there, is marvellous. From 300 to 400 men, in the whole, are at present engaged on the building,

How to Put Out Fires in the Holds of Ships.

The following letter from the London Times contains information which will be of great interest to captains of vessels and others:—"The owners of the Caleb Grimshaw demand a means for extinguishing fire in the hold of a ship. The materials required are nothing more than a cask of common chalk in the bottom of the hold, connected with the deck by a small pipe, and a two gallon bottle of sulphuric acid, which, on the alarm of fire, being poured down the pipe will generate a sufficient quantity of dense smoke (gas in which flame cannot exist) to extinguish any fire however large. I enclose my card, in accordance with your rule, but any chemist knows flame cannot exist in carbonic acid gas, which is generated by the action of the sulphuric acid on the chalk."

[The above information was published more than a year ago in the Scientific American. But the question lies in this, how can the carbonic acid gas get at the fire? The whole under hold of the ship might be laid with a strata of it, and holes bored with tubes to communicate with any part of the vessel. There is no other way but this.

Niagara Falls Suspension Bridge Co.

The Hamilton Gazette states that another quarterly dividend of three per cent. per share has been declared for the quarter ending first January last, payable on the first February. The Company appears to be in a most flourshing condition, and is one of the most prosperous in the country. The stock is steadily increasing in value, and is much looked for.

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New Inventions.

New Kind of Gas.

Prof. Gesner has discovered a new illuminating gas and exhibited it last week at No 93 Liberty street, this city, in the presence of gentlemen, somewhat distinguished for their scientific attainments. With the use of a retort recently invented by him, in which he placed a pound of bitumen or mineral pitch, obtained from the Island of Trinidad, he succeeded in producing in about twenty minutes, nearly six cubic feet of gas that burned with unusual brilliancy—sufficient to supply one burnerfour hours. The Docter says that gas can be furnish-in this manner possessing a much higher illuminating power than that now in use, and at a much lower rate. By introducing his patent retort into common gas-works, the expense of manufacture, he says, will be reduced two-thirds. Dr. Gesner has obtained a patent for his invention, as will be seen by reference to another column of this paper.

We will publish an article next week on this subject, explaining the nature and benefits of this invention at greater length.

Machinery for Washing Dishes.

Mr. Joel Houghton, of Ogden, N. Y., has invented a machine for washing dishes, so as "to save the *women-folks* a deal of trouble." The dishes are placed in a rack and set upright when it is carried to a vessel containing water and a little soap, and by turning a crank the dishes on the rack are whirled in great style to remove all the dirt. The unclean water is then drawn off and re-placed by clean boiling water, and the crank again turned a few seconds. The dishes are then clean, and can remain in the rack, which obviates the repeated handling of the dishes. About two years ago, one of our subscribers invented a very ingenious machine for washing the floor. All that was necessary to be done to it, was to turn the handle, move it every square yard, and supply it with clean water. By turning the handle it scrubbed the floor, wiped it up, and wrung out the cloth. It had a spring, a drum with a cord on it, and a few levers peculiarly combined and worked by cams, all operated by a handle revolving a wheel.

New Locomotive.

Messrs. Norris, of Schenectady, N. Y., have lately placed upon the Syracuse and Utica railroad a new locomotive engine designed for high speed. It has two driving wheels, of 7 feet diameter, the shaft of which is back of the fire box; a pair of carrier wheels, forward of it of 4 feet diameter, and four truck wheels, each 3½ feet diameter. The wheels, are all of wrought iron, and the cylinders are 16 by 22. The plan of the engine is new, the top of the boiler is lower than these commonly used in the 4½ or 5 ft. connected wheels. The frame work of the engine, and the wheels, are fine specimens of mechanical skill; It is designed after the English kind. Its speed so far as it has been tried, is very great.

New Artificial Bearing.

Mr. Christian Schiele, a very ingenious German of the free city of Frankfort, but now of Manchester, England, has discovered the true form to construct bearings so that every part of the rubbing surfaces shall always wear alike, and equal. It can also be applied to valves, cocks, pivots of upright shafts, millstones, &c. The discovery is a peculiar curve, and it has already been patented in England, where it has received universal commendation. A patent for the United States, has been applied for. The Agent is Mr. P. R. Mehlgarten, of Lowell, Mass.; a very scientific and able mechanic.

Singular Association.

An association has been formed, at the City of London Mechanics' Institution, to promote the practice of decomposing the dead by the agency of fire. The members propose to burn with becoming solemnity, such of their dead as shall have left their remains at the disposal of the association. The entrance fee is one shilling, and the council meet to enrol members, &c, on the second and last Wednesday in each month.

Rosin for Fuel.

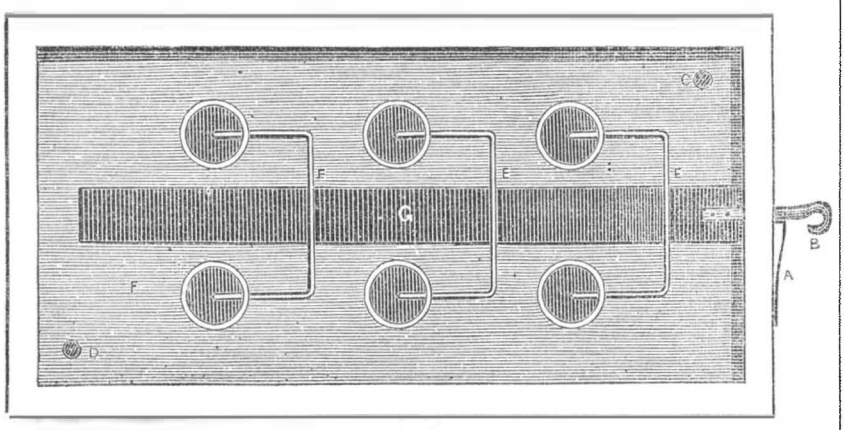
I have for some thought of asking you to call the attention of your readers to the burning of rosin to make steam: it can be burned with wood, or without wood by having a suitable hearth to burn it on. The price, I believe, ranges in your market from 6s. to 8s. per barrel, and is cheap fuel at these prices.

I am not aware of its being used for fuel by any body, except glass manufacturers, and I see no reason why it would not answer an excellent purpose for steamboats and locomotives, and three barrels will make as much steam as a cord of wood. Yours, &c., G.W.H.

Square Stone.

The Louisiana Statesman remarks that the Second Municipality, New Orleans, is now receiving from Belgium, upon contract, a supply of paving stone, of the finest quality and texture. The blocks are cut perfectly square on their edges, and the upper faces are hammered, and being nearly of size, can be laid diagonally on the street. In the olden time the Dutch forefathers of this city imported the bricks and tiles for their houses from Holland, but who would have believed that in our day the stones for the streets of New Orleans would be imported from Flanders, but so it is.

IMPROVEMENTS IN APPARATUS FOR MAKING MOULD CANDLES.--Fig. 1.

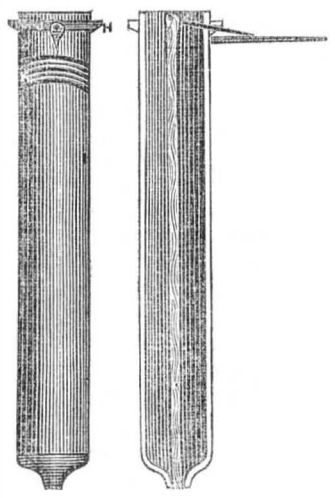


The inventor of this improvement is Mr. Andrew L. Brown, of New Haven, Conn. The patent was issued in the month of last October. The superiority of this apparatus has been acknowledged by some of the oldest candle manufacturers in the country, who have thrown their old machines aside, and now employ this kind.

Fig. 1 is a top view of the upper surface of the frame and moulds, when the tallow table is removed, showing the slide and wires which support the wicks, and how those wires pass through the sides of the moulds.

Fig. 2 is a side view of one of the moulds, showing the screw by which it is to be adjusted and secured in the frame; the shoulder on which the tallow table rests, and the hole through which the wire passes. Fig. 3 is a sectional view of one of the moulds, showing the wick when in the mould, as supported by the wire.

Fig. 2. Fig. 3.



The improvement in this apparatus consists in constructing the mould with a screw on the upper part, about two inches from the end, for adjusting and securing it in the frame, and a shoulder near the upper end, to support the tallow table, and a hole to admit the wire which supports the wick; also in attaching all the wires which support the wicks to a slide worked by a jointed wire handle, and governed by a guard, so that all the wicks may be evened by one motion of the hand, and then be all centred by another motion; also in using a smooth tallow table, level with the tops of the moulds, to allow the tallow to be easily scraped off and the whole kept clean. The moulds are made of any suitable material like Fig. 8, and they are adjusted to the frame by the screw, K, and it has a shoulder at, H, to support the tallow table, and it has a hole, J, at one side, through which the wire, E, fig. 1, passes to support the wicks. The frame is made of wood, through the bottom of which the moulds are adjusted about two inches deep. The moulds are adjusted in the bex, as seen in fig. 1, to the proper height, to leave room for the slide, so as to move freely and adjust the wicks. The slide, G, is made of tinned iron, or any other suitable substance, and its length is about an inch less than the inside of the box, F, to allow it to be moved lengthwise, to even and centre the wicks, and to draw back the wires out of the candles after they have cooled, to let the candles be taken out. B is a jointed wire attached to the slide; E E are the wires of the slide which pass through the holes, J, of the moulds. A is a spring guard, the bent end of which passes through the same hole as the wire, B, to regulate the motion of the slide when evening the wicks, the moulds are adjusted, as seen in fig. 1, to the proper height perfectly level, by the screw, K, and the slide G, is then placed in its proper position, with the wires, E E, inserted in the holes, J, fig. 2, and the wire, B, is then through the hole, as seen in fig. 1. The wicks are then inserted in the moulds in the usual way, with the loops passing over the wires.

To even the wicks place the thumb on the spring guard, A, pressing it snug to the end of the box, and by means of the jointed wire, B, the slide is drawn back till the ends of it touch the spring guard, A, when all the wicks will be evened on the wires. By pushing in the slide, G, by the wire, B, the wicks will all be centred in the moulds, and then they are ready to receive the tallow. The tallow is poured in the usual way, and when it is cold, the slide is withdrawn and the tallow on the surface scraped off, when an awl is inserted into the loop and the candle withdrawn.

Whenever it is necessary to take out the tallow table, it may be done by inserting two small rods upwards through the two holes, C D, fig. 1. The advantages of this apparatus, are the excellent plans of evening and centring of the wicks by the slide; and the auxiliary tallow table resting on the shoulder of the moulds, to allow the tallow to be cleanly and easily scraped off, thus making more beautiful candles, while the manner of making them is rendered much easier and certainly more correct.

Letters addressed (*p. p.*) to Messrs. Farr & Briggs, Candle Mould Makers, No. 30 Rector street, this city, will meet with prompt attention.

Failure of an Oil Gas Company.

The city of Dayton, Ohio, established a Co. to illumine it with Gas made from grease; but it has failed, and the Company have abandoned the project—suffering a loss of about $12,000. They want now to increase their capital and turn it into a coal Gas Company.

Fine Casting of Brass.

The principal object in fine casting is to have a mould that shall receive a beautiful impression, and at the same time sufficiently adhesive to resist the force of the fluid metal, that shall neither wash nor be injured by the heat. The sand that covers or surrounds the model should be fine close sand; after removing the mould, the model must be faced with burnt rotten stone, and covered with loam, each dusted through a bag, and the mould laid down upon it; this facing may be repeated, the mould must be dried and smoked with a torch in lieu of water; the sand is moistened with a solution of the lees of wine, or with cream of tartar. Care must be taken to loosen the bands quickly, viz., loosen the first mould while the second is pouring, &c. On removing the work, every particle of the facing should be carefully scraped from the mould, and thrown away.—Part the moulds with coal and black rosin.

For Common Jewellery,—Melt together three parts of copper, one of Bristol old brass, and four ounces of tin to every pound of copper. If this alloy is for fine polishing, the tin may be omitted, and a mixture of lead and antimony substituted. Paler polishing metal is made by reducing the copper to two or to one part.

Gilding Metal.—Melt together 4 parts of copper, one of Bristol old brass, and fourteen ounces of tin, to every pound of copper.

Yellow Dipping Metal.—Melt together two parts Cheadle brass, one part copper, with a little Bristol old brass, and a quarter of an ounce of tin to every pound of copper. This alloy is almost of the colour, &c., of gold coin. Cheadle brass is the darkest, and gives the metal a greenish hue. Old Bristol brass is pale and yellow.

Another.—Good dipping metal may be made of one pound of copper to five ounces of spelter; the copper should be tough cake and not tile. When antimony is used instead of tin it should be in smaller quantity, or the metal will be brittle.

Imitation of Silver.—When copper is melted with tin, about three-quarters of an ounce of tin to a pound of copper will make a pale bell-metal, and they will roll and ring very near to sterling silver.

Tutania or Britannia Metal.—Melt together four ounces of plate brass and four ounces of tin. When in fusion add four ounces of bismuth and four ounces regulus of antimony. This is the hardening, which is added at discretion to melted tin, until it has the requisite colour and hardness.

Another.—Melt together two pounds of plate brass two pounds of mixture of copper and arsenic, either by cementation or melting, two pounds of tin, two pounds of bismuth, and two pounds of regulus of antimony. This is to be added at discretion to melted tin.

Another.—Melt together one pound of copper, one pound of tin, and two pounds of regulus of antimony, with or without a little bismuth.

Patent Met l Life Boats.

Over 700 of Francis' patent galvanized iron and copper life boats have been put into service on the principal waters of the United-States. They are in use on the great steamboat lines and on the lakes. The south shore of Long Island and the coast of New-Jersey, have been furnished with them by government order.

Another mammoth steamboat has been built at St. Louis. The St. Louis Intelligencer says she will draw, when light, only 3½ feet and will carry eighteen hundred tons. She is 315 feet deck, 38½ feet beam, 37 feet floor, and 8½ hold. Her cylinders are 31 inches diameter, and ten feet stroke. She has five boilers 32 feet long and 44 inches diameter, with a "doctor," and an engine for raising the cargo out of the hold

The internal commerce of the West is estimated at $526,000,000, annually, to carry on which 80,000, boatmen are employed. Of late the Christian Churches of the west have paid considerable attention to the moral and religious condition of this class, and the Boatmen's Union are accomplishing much good.

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Scientific American

NEW YORK, FEBRUARY 9, 1850.

Advice to American Inventors.

Within a few weeks, our readers must have noticed two references made to alledged foreign inventions, as being derived in some way from America; in other words, the honor of prior discovery should belong to Americans. One of these discoveries was a new method of casting metal pipe; the other was an attachment of an alarm and a mode of lighting a lamp by a clock. From all the evidence which we have been able to gather on the subject, the American inventors have just claims to priority of invention, which is a very great honor indeed, but it also appears to us that the foreigners were self-inventors—that is, they designed and completed their inventions without any knowledge of the American inventions, and they now claim almost equal honor with the first inventors. Why? Because the American inventors did not publish some account of their inventions in a periodical devoted to science and invention This is not the dark age; we live in times when the press is made the herald of what is new and what is useful. What can the world know of an invention, however useful, if it is shut out from its ken, and surely every person should *know* enough now, to *know* that the only true way (and the best ever discovered) to establish priority of discovery, is to place the invention within the *light tower* of the press. Had this been done with the inventions mentioned, the broad fact of priority of the American inventions referred to, would long before this time have been shed abroad upon almost every corner of the earth.

When a person discovers something that would in his opinion be valuable and profitable to himself, and the publication of the same be injurious to his interests, such as a chemical compound; he should at once file a caveat to secure his discovery, if not fully matured, but if matured he should at once apply for a Patent, and then publish, the nature of his discovery, and the benefits that will result from it. It is not prudent always to publish full descriptions of chemical discoveries, for secretly, they can be infringed, but it is right and wise to publish what qualities the discovery possesses.

It sometimes, yea very often, happens, that an inventor makes a discovery, but to satisfy himself respecting its merits, requires experiments which cannot be hid from prying eyes, such as castings and the construction of the machine. In the majority of cases, a Caveat is the only safety, and to make all doubly sure, a clear description of the invention should be published. This both covers the honor and the rights of the inventor. We know a gentleman who by the injudicious advice of friends to keep all secret, when it was scarcely possible to do so, lost one of the most valuable inventions in the Republic. Another person got a patent, more than a year after he commenced to make his machine in *private*, and he cannot now, according to law, use his own invention.

In respect to foreign patents, we believe, that many good American inventions are pirated from the original inventors and patented in England. This can be done by the English Law, which is a libel on justice. We hope to see that odious statute abolished before we leave this land of the living. If American inventors want to patent their inventions in England, let them beware of what they are about, let them be prompt and secret in their foreign movements, and let them be careful in whom they trust.

For the Scientific American.

Geology of Florida.

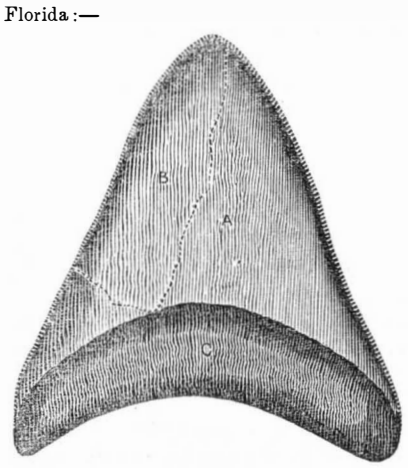
The cretaceous system of rocks which appear to underlie the whole of Florida, abounds in fossils peculiar to that formation, and in the numerous streams which drain the southern portion of the peninsular, fossil bones of the mammoth are abundantly found, with here and there remains of the mastodon, turtle, shark, and other animals. So thickly are these fossils strewed along the course of the adjacent river, (Pease Creek) that, in many places its bed is literally paved with their remains, and the wondering Indian points with astonishment to well preserved teeth, which he supposes to have belonged to a former race of immense giants. The animals to which these bones once belonged, must have attained in some instances a very large size. I have in my possession a portion of a tooth—the last in the lower jaw, I presume, of the fossil elephant, which measures on its grinding surface nine inches in length by four inches in breadth, and is eight inches to the bottom of the root; it weighs nine pounds. The entire tooth, if symmetrical, must have been fourteen inches long, four inches broad and nine inches deep; this tooth, with several others, was found in Pease Creek.

A tooth of the mástodon was discovered in a neighboring tributary—which we have called Fossil Creek—of the following dimensions:—six and three-fourths inches long, four inches broad and three inches deep,—its root being partially broken off. This tooth was the last in the jaw, and when entire, measured probably nine inches in length.

In addition to the above, portions of the vertebræ and other parts of the skeleton, with a large amount of broken fragments of ribs and tusks have been found; one of the pieces, being part of a rib, I presume of the mammoth, measures eight inches around its cross section. I have in my possession what appears to be the front part of a knee joint, which belonged to a bone probably eighteen inches in diameter. Also a portion of the upper shell of a fossil turtle that averages, perhaps, one inch in thickness.

These remains are, however, surpassed by the fossil teeth, abundantly found, of an extinct race of sharks, of huge dimensions; we have found them whole and broken, of all sizes, up to the dimensions of the largest, which, when entire, must have measured over three inches at its centre, above the jaw, along its enamel, by four and a half inches broad, and more than three-fourths of an inch in thickness above the gum. The entire tooth could not, probably, have been placed in a rectangle of less than five inches long, by four and a half inches broad. The dimensions of its huge owner could not have been less, I think, estimating by zoological rules, than eighty or one hundred feet long.

Shark's Tooth found in Pease Creek, East Florida:—



A, is a half size of a shark's tooth, re-produced from B, the fragment found: the enamel on this is perfect. C, root of the tooth.—The shark to which this tooth belonged was probably 90 feet long.

Many of these fossils, together with fragments of different kinds of wood are petrified, either into siliceous or calcareous stone, the organic structure being perfectly preserved. These stony remains of animals long extinct, seem to be in keeping with the singular district of country bordering on this fossiliferous region. Mile after mile, for more than a day's journey, is monotonously passed over in what is appropriately called the "deadening;" the blackened trunks of pines stand thickly over the surface, interrupted here and there by small prairies and patches of hammock, but they seem as if blasted by the fire of heaven. Occasionally a living tree is seen, contrasting strangely with the scene of desolation around it. What could have produced such an extended destruction of vegetable life is left to be conjectured; the Indians say it took place after a great hail storm many years ago, and some consideration attaches itself to this supposed cause, from the observation of an officer, that the deadening coincides in direction with the north east storms. Geo. W. Rains,

Bvt. Captain U. S. A.

Post on Pease Creek, Florida, fifty miles from Tampa Bay, Jan. 10, 1850.

Meeting of Gas Consumers.

The fourth public meeting of those who are opposed to the present Gas Companies, of this city, was held in the Broadway House, on the evening of last Wednesday, 30th ult., when a long petition, to be signed by the inhabitants of the city and to be presented to the Common Council, was introduced and adopted. The following is the most important part of it:—

"Your petitioners, therefore, pray that your honorable body will annul the contracts made by your predecessors with the New York Gas Light Company and the Manhattan Gas Light Company, because of the failure, by said companies respectively, to perform the conditions contained in their contracts. And that your honorable body will adopt the necessary ordinances to form a public gas department in the government of the city of New York, and to provide for supplying the public lamps and buildings and the citizens of said city with gas for lighting streets and buildings, at the lowest price which will defray the cost of its production and supply, and carry such arrangements into effect as early as may be practicable; or, that you will grant to your petitioners and their fellow-citizens such relief from the exactions, now made upon them and the city treasury, for the supply of gas light furnished by said companies, as to your honorable body shall appear most expedient and just."

The meeting was then organized into a permanent Gas Consumers' Association, the officers of the general meetings being continued as such under the new organization.

The following is one of the resolutions adopted.

"Resolved, That the prices heretofore charged by the New York Gas Light Company and the Manhattan Gas Light Company, for the light supplied by them, under the monopolies granted to said companies by the Corporation of New York, have been excessive and exorbitant; that these unjust and arbitray exactions of the privileged few call for an immediate abrogation of the powers conferred upon them, and the establishment of such measuras as will effectually secure the public treasury and private citizens from similar impositions."

The price of gas in this city is shamefully exorbitant, there certainly should be a reform, but the present companies can make the reform better than the new ones. Why? Because they have the materials all laid down, they only want right management. Gas could be made in this city for one-third the present price, and all the coals imported; but the Liverpool coal is not the best. If the Gas companies were wise and enterprising, and economical, our mechanic's houses would be lighted with it, instead of candles and expensive fluids.

Near the close of the meeting, some speeches were made; and Mr. Paine, from Worcester, was there, and spoke a few words in favor of a hydro-electric light, of his own invention, by which, he said, that the light which now costs one hundred dollars a year, can be furnished at two dollars. A machine of this description will soon be exhibited in this and other cities. He alluded to the remarks which Professor Grant made, at a previous meeting, concerning him and his light, and denied their correctness.

Professor Grant then rose and said—May I ask if you are the great "shot at?"

There was not much courtesy nor polish in this, in fact, it was decidedly ungentlemanly towards Mr. Paine, who, however, made a most suitable reply—it was this:

"If the inquiry has anything to do with light, I will answer it."

We have now a word to say here about Mr. Paine, his light, and Mr. Porter. We saw a statement, in the Louisville Journal, reflecting upon Mr. Paine, as a kind of humbug, and praising Mr. Porter as an honest man. We see that the Washington Union and the Journal have always named him as former editor of the Scientific American, and he always publishes himself as its original editor. We have no objections, but we must state that he was only editor during the first and part of the second volume, and our readers well know how much the form and character of our paper has changed since then. Mr. Paine says that many of his statements in his Washington letter were gratuitous, unauthorized. Whatever people may say about Mr. Paine, and whatever the public may think of him, one thing we know, there is not a neater handed or more ingenious mechanic in the United States. He is a great expert at making philosophical instruments, and this is well known to every person in Worcester. With regard to his *Electric Light*, we have some doubts about it, because it is opposed to present philosophical knowledge, but, personally, we would be the last in the world to throw ridicule upon any man, on this account, for he may be right and philosophy, as known, wrong, but we must cling to what we believes is correct, until we are convinced of our error. Many an inventor is honestly deceived, that is, his expectations may be too high regarding his own discovery. A disinterestsd person is generally the best judge In respect to the letter of Carburetted Hydrogen, in our last number, we do not blame Mr. Paine, or any inventor, for making all they can out of any useful invention. The public is seldom thankful to inventors, so they must look to themselves while they are laboring for the advancement of science at the same time.

Works on Science and Art.

Civil Engineering.—An Elementary Course of Civil Engineering, by D. H. Mahan, M. A. Fourth Edition: published by John Wiley, 161 Broadway, New York.

This is a work well known to the American public, by name, but this edition is mostly rewritten, and consequently much better than former ones, and to the Civil Engineer is a most valuable volume. Its first section treats of building materials, such as stone, lime and all the various kinds of mortars, cements and mastics. It then treats of wood materials—iron, paints and varnishes, as employed in building. The next is on the strength of materials, embracing a most extensive fund of information on the subject. Masonry is the next section, treating the whole subject in the most thorough manner. The next section is on Framing. It is a most valuable chapter. The next chapter embraces the methods of building Bridges, both of stone, wood, iron, and contains essential and important information about Suspension, Cast Iron, and Aqueduct Bridges.

The next chapter is on Roads, such as highways of every description, and railways. The three concluding chapters are on Canals, Rivers, and Sea Coast improvements. This book contains all the necessary information for a person who wishes to be acquainted with civil engineering. Its great merit in our eyes, is its simplicity of arrangement and clearness of diction. It is very different from a number of other works that we have seen on the same subject, inasmuch as the author disrobes the subject of all learned nonsense, and presents it in a simple but dignified garb. It is always an evidence to us of mastery over a subject, when it is rendered clear and intelligible, and we hold the reverse opinion in respect to obtuse treatises relating to the practical arts.—The price is $3.

The Prussian Rifle.

The Boston Traveller mentioned recently, on the authority of a private letter received in that city, from Berlin, that an American gentleman had succeeded in working out the whole of the secret of the new Prussian Rifle, and that he had purchased and made experiments with one, which he was about to forward to our government.—[Phila, Ledger.

[It is not often that the Ledger is found over looking our columns. The Prussian Rifle is patented in America, and was illustrated an described by us a few weeks ago. The *American gentleman* who is in Berlin, as mentioned by the Traveller, must be an exceedingly penetrating genius—a patriotic explorer of foreign inventions. The Prussian inventor is now residing in New York.

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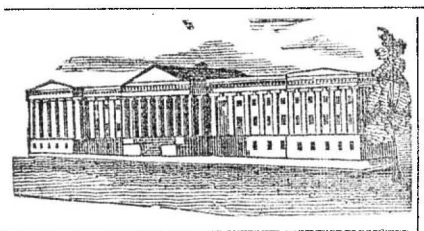

LIST OF PATENTS CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending January 29, 1850.

To John Butler, of Buffalo, N. Y., for improvement in Brick Presses.

I claim the combination of the crank, chain, and oscillating frame or carriage, with the stationary bed of rollers—the whole being arranged and operated as herein described, for the purpose of supporting the moulds while being filled and pressed, striking the bricks and then pushing the moulds of the machine.

To S. Crane, of Charleston, S. C., for improvement in wash mixtures.

I do not claim any of the ingredients contained therein, when employed separately, as they are well known; but I claim the above described compound, consisting of soap and ley, pearlash, ammonia and spirits of turpentine, in the proportions substantially as herein set forth.

To R. Caulkins, of Sandusky City, Ohio, for improvement in Utero-Vaginal Supporters.

First, I claim the combination of the elevating levers, with the tube made of any material, and the mode of raising and spreading the said elevating levers by the screw, with its conical groove, as herein described or in any way substantially the same.

Second, I further claim the capsule distended by the sponge introduced through the tube, for the purpose of supporting the uterus and vagina in the manner set forth.

[A very excellent invention.—Ed.

To B. Crawford, of Alleghany City, Pa., (Assignor to English, Bennett, Frisbee & Crawford) for improvement in Steam Boiler Furnaces.

What I claim is the injection of whirling jets of highly heated steam among the gases evolved by the fuel on the grate simultaneously with the forcing by the steam blower of a stream of mingled steam and heated air through the ash pit into the fire; the air being heated substantially in the manner described by the exhaust steam and waste heat of the flues, and the draught of the flues, being maintained by whirling jets of steam injected by the steam blower.

[This invention is to economise fuel by rendering the combustion more perfect.]

To Abraham Gesner, of Halifax, N. S., for manufacture of Illuminating Gas from Bitumen.

I claim the use of compact and fluid bitumen, asphaltum, chapapote, or mineral pitch, for the production of illuminating gas, to be substituted for other materials now in use. I also claim the retort in combination with its moveable case, in the manner and for the purposes set forth.

To Stephen White, of Manchester, England, for improvement in preparing illuminating gases.

I do not claim generally the use of water as a material from which to produce gas, nor the use of charcoal, coke, or anthracite coal, separately, as a material to be used as the agent for decomposing water and producing hydrogen oxide of carbon and light carburetted hydrogen gas; but I claim, and limit my claim to the method which I have described of producing hydrogen gas oxide of carbon gas and light carburetted hydrogen gas combined freed or nearly freed from the presence of carbonic acid gas by passing the gas evolved, by the decomposition of water through a mass of materials consisting of charcoal, coke or anthracite coal, in combination with thin iron plates, iron wires or iron twinings heated to a high temperature, such compound gas produced as aforesaid being combined with heavy carburetted hydrogen gas produced by the decomposition of rosin, oil, fat, or pit coal, or such other substances as herein designated, as described, but I do not claim the mode herin described of decomposing the water. I claim the use of small chains or other similarly connected pieces of metal, as a means of presenting a large amount of iron surface for decomposing the resin, tar, oil, or fats or other such substances herein before designated, such chains or other similarly united pieces of metal, being so arranged as to expose the vapors disengaged from the above mentioned substances to a multitude of small divided and heated surfaces.

To Robert Hare, of Philadelphia Pa., for preparation of animal and other manure.

I am aware that sulphuric acid has been employed as a manure alone, and also to decompose bones for the purpose of procuring super phosphate of lime to be used as a manure. These applications of it therefore I do not claim. What I claim is the use of the the mineral acids to act upon the soft parts of animals, &c., upon azotous vegetable matter, at temperatures varying according to circumstances, substantially as herein set forth, for producing a concentrated manure.

Second, I also claim the combination of the mineral acids with the different salts, as described, for modifying the antiseptic action of the acids on azotqus material, and for rendering them pulverulent, whether said azotous materials be animal or vegetable.

Third, I also claim the combination of the mineral acids with wood tar, coal tar or their equivalents, in the manner and for the purposes herein described.

[This must be a valuable discovery, or Robert Hare would not patent it.

To Adrian Janes, of New York, N. Y., for improvement in apparatus for heating air by hot water.

What I claim is the peculiar construction and arrangement of the heating apparatus, by uniting the series of straight horizontal pipes into gangs, by vertical end pieces, through which the circulating water is conveyed to all the pipes in the gang, in combination with the union boxes (two), the series of gangs forming the cluster being united at one end, at the top of the end pieces by the union box, and at the opposite end, at the bottom by a similar box, through which the water circulates, to all the pipes, by means of a flow and return pipe, connected with the boiler or heater at the furnace, as herein clearly specified.

To Josiah Lamb, of New London, Ind., for improvement in self-waiting tables.

What I claim is arranging and operating a dumb waiter and fan, so as to cause them to be self-acting, subtantially in the manner as described.

To Thos. McLaughlin, of New York, N. Y., for expansion-gear for puppet-valves.

What I claim is the use and employment of the connecting rod, acted upon by two eccentrics, in combination with the reciprocating plate and arm, having an angular opening in it, and quadrant shaped plate, or its mechanical equivalent attached thereto, for the purpose of working puppet valves, in form and manner substantially as set forth.

Louis de Saulles, of New Orleans, La., (Assignee of Louis Henri Frederick Melsen. of Louvain, Belgium) for Composition for the manufacture of Sugar. Patented in Belgium, Aug. 15, 1849.

What I claim is the mutisme, or process of treating saccharine solutions by means of a solution of acid sulphite of lime, baryta, or strontia, as herein before described, applied to products containing sugar from the cane or other vegetables, that the crystallizable sugar may undergo no chemical change either by the formation of secondary products, which destroy it, or by the generation of ferments which modify or transform it.

To Oliver Pearl, of Essex Co., Mass., improvement in driving bobbins upon spindles.

I claim the counter-sunk friction button, made substantially as specified, or in other words the combination of the friction annulus, with the enclosed space for the reception of dirt and extraneous matter, when used in connection with the spindle and bobbin, substantially as specified.

To E. Phelps, of Pittsburgh, Pa., for improvement in gearing for sugar-cane mills.

I do not lay claim to the general arrangement by which a heavy horizontal wheel is made to traverse on friction rollers. This, I am aware, has often been done when such wheel was fixed to its vertical axis, by permanent arms, especially for the purpose of enabling the wheel to support heavy weights, as in the common turn tables of railroad stations. But in such cases there is no strain or vibration primarily given to the vertical shaft, as is the case of the cane mill having one of its rolls on the vertical shaft, which is to be driven by the heavy face wheel.

But I do claim the wheel revolving horizontally, in combination with the jointed or loose braces (four) connecting but not not fastening it to the shaft, and with the fixed arm, the vertical grooves (two) and the friction rollers acting together, substantially in the manner and for the purposes herein set forth, not limiting myself in these claims to the exact number and arrangement of the several parts herein described, but varying the same at pleasure while I attain the same ends by means substantially the same.

To L. H. Potts, of London, Eng., for method of sinking hollow piles, &c., by exhausting the air from the interior of the same.

Having described what I consider as generally the most attainable means for producing the required effects, I do not intend to limit myself thereto but to use any known mechanical means that may be best adapted to any particular circumstances, as I hereby disclaim any invention of the parts employed irrespective of the manner in which they are to be used for any of these purposes.

What I claim as my own invention, of improvements in the mode of sinking piles, tubes, caissons, shafts, and other structures, and which I desire to secure by Letters Patent of the United States, consists in the attenuation of the air approaching to, or forming a vacuum in the interior of a hollow pile tube caisson shaft or other structure by any of the known means of producing what is termed suction; by which the hollow pile tuhe shaft or other structure is made to descend as before described,

To Jas. Turnbull, Jr., & John Turnbull, of Simsbury, Conn., for improvement in Looms for Piled Fabrics.

We do not wish to confine ourselves to the precise mechanical arrangements herein specified for operating or shifting the picker tappets, although we have essayed it with success, and deem it the best, but other arrangements may be devised for carrying this part of our invention into effect.

As to the third part of our invention, any desired known means of regulating the friction of the fly-wheel on the shaft may be substituted for the temper screws herein above described, as the means of regulating the friction, is not of the substance of our invention, nor is it essential to our invention that the friction be adjustable, although we deem it advisable to have it so. In the adjustable mode of throwing back the shuttle staffs, we do not wish to confine ourselves to the use of a nut to regulate the tension of the helical spring, as other mechanical equivalents may be substituted therefor, such as a wedge in a slot, but we have described and represented the nut as the most advantageous in our estimation.

In relation to the fifth part of our invention, we do not wish to limit ourselves to the number of rollers nor to the mode of making friction on the rollers, over which the warps pass as our invention is irrespective of these.

We do not wish to limit ourselves to the precise arrangement above described, for connecting the ratchet wheel of the take-up motion with the roller, as this may be varied at pleasure without affecting the mode of operation of this part of our invention.

And finally, with regard to the last part of our invention, we do not wish to be limited to the precise direction in which the thread is carried from the eye, near the end of the shuttle to the delivery eye, near the middle of the length thereof, as this may be slightly varied, and still retain the character of this part of our invention.

What we claim is, first, dividing the heddles into two or more divisions, to be worked in succession, substantially as herein described, that the entire opening of the shed may be effected in succession, and thus avoid the evil effects consequent on the opening of the shed at one operation, as described.

Second, operating the two picker levers or treddles, by means of a shifting tappet operated or shifted alternately for each pick by means of an eccentric or its equivalent that the shaft which carries the tappet or tappets may make one entire rotation for each throw of the shuttle, substantially as herein described, and thus operating the shuttle by a tappet rotating with greater velocity than by any means heretofore known, as described.

[The explanations to these claims are very long: we do not find fault, but it is not a little mortifying to know, that the Patent Office oftentimes sends back specifications to have these explanations embodied in the main part, and to make the claims short and comprehensive. Surely the action of the Patent Office should be uniform, not eccentric. Has one examiner one mode of procedure and another a different one? This should not be.]

To J. W. Webb, of Ledyard, N. Y., (Assignor to B. Gould, of Ledyard, N. Y.) for improvement in Mills for grinding.

What I claim is the combination of the cone screws as above described with the beaters or rubbers on the cylinder, substantially as described.

To John M. Reed and Wm. B. Willis, of Charlestown, Va., for improvements in Flour Bolts.

We do not claim to be the original and first inventors of bolts for bolting the flour, or of any of the several parts of the bolting apparatus that have heretofore been used for that purpose in the ordinary modes, but what we claim is the combination of the revolving wire screens with the ordinary bolts, whether stationary or revolving, for bolting flour, by which the larger particles of bran and extraneous substances that may chance to pass into the bolts with the meal are separated therefrom by the said wire screens and are thus prevented from coming in contact with the bolting cloth whilst the wings drive the flour through the screens and bolting cloth by the combined action of centrifugal force and currents of air produced by the rotary motion of said wings by which the advantages stated in the foregoing specification are obtained.

Piercing Glass and Stone-Ware Vessels.

The most simple method of making a hole in the bowl a glass bolthead, the arch of a retort, or the side of a receiver is, if possible, to pick out a place where there is a bubble in the glass. A very hard steel point is then taken, and worked round in the place, where it generally soon makes a hole down to the bubble; and by a repetition of the process, the hole is completed, which is then enlarged at pleasure, by a rat-tail file. Care must be taken that the file is smaller than the hole, for if it should stick in the hole, the endeavour to disengage it would certainly crack the glass.

Holes are made in the arch of stone-ware retorts, by putting them between the knees, and striking a hard steel point with a hammer, round the place where the hole is to be made, until an opening is effected, which is then enlarged by a rat-tail file, and finished for use by grinding a glass or stone-ware stopper in it with sand and water, or emery and oil

Dr. Lewis's method of making such holes for the insertion of barometer canes into glass receivers, was by pasting on the receiver a piece of thick leather, having a hole of the intended size cut in it, then filling the cavity with emery, and turning round in it a steel instrument, with a hollow in the point for retaining the emery, till the glass was worn through.

In Paris, there are workmen who pierce glass and stone-ware, by a hollow drill, which cuts out a circular piece of the vessel. This succeeds very well when the hole is made several lines in diameter, but making merely pin-holes, the workmen are apt to crack the glass; they succeed very well in making these small holes in stone-ware vessels.

The best method of drilling glass or porcelain, is stated to be the employment of a diamond point, set in brass, worked either by the hand, in an upright drill stock, or in a seal engraver's engine. The latter way, perhaps, is preferable, as the mill will be more steady; but some thin oil must be used with the diamond.

The Egyptians adopt a curious method of making a turkey tender. Half an hour before the bird is killed, a glass of brandy is poured down its throat, which produces complete intoxication, and the flesh of the tipsy turkey acquires a tenderness superior to that which is produced by long keeping.

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TO CORRESPONDENTS.

"W. B., of Worcester."—We think no patent has ever been obtained for an arrangement, such as you describe. If this is the only point you desire to settle before making experiments. We can advise you to go on without fear.

"J. H. C., of Ohio."—We will soon answer you.

"J. H. P., of New York."—Your plan was wrong. We shall have to write an article on the subject. The wool is first dyed and then the cotton must go through a cotton process, using cold sumac.

"J. W. M., of Phila."—Your beam surely can be patented. We do not wish to say any more about it, till you decide.

"J. S., of Ind."—Your letter containing $50 is received. All right.

"E.W. of N. Y."—In regard to the draught of chimneys, the present plan of locomotive and other smoke pipes, are the reverse of the plan you propose. You know that this is a subject that requires practical testing, and the old plan, which had been used for generations, was to taper the chimney to the top. The inverted cone has proved to be the best plan, for all the old chimneys smoked.

"J. T. M., of N. Y."—We cannot tell the reason of your boiler foaming: it may be that you have put potatoes, indian meal, or something of that kind in it; if so it will soon get over it. Foaming is not uncommon when some substances get in the boiler. Clay makes the water foam, and so does bran—if the water is hard.

"E. W. D., of Ct."—We believe that you could obtain a patent, but you must confine your claim to the way of making the shuttle accomplish the object stated. The first thing required is a model, which must show the operation.

"E. V., of N. H."—We advise you to try the experiment to convince yourself, and mind what we tell you, that you will be much disappointed. No motive power of 700 lbs. can be obtained by an expenditure of only 200 lbs. This would be a creation of power—a thing impossible. We have no faith in any rotary engine that we have ever yet seen.

"J. E. B., of Md."—Parker claims as an infringement two wheels on a shaft, and letting on the water with a circular motion. Yours answers this description.

"P. H. W., of N. Y."—You know that this is a mooted point with millwrights. We have called for information on the subject, and have not got it. The only real way to find out is to try by a Dynometer—the power given out, with the pinion taking the power at various points, each point a new trial. We are afraid that you cannot make your engine work tight.

"J. V. R., of N. Y."—Your improvement for accidents, by the breaking of axles, is a good one and worthy of a patent, but we cannot tell whether it would be profitable to you or not. If not, save your money. The cost would be about $50.

"A New Subscriber," of Brooklyn, is informed that he can file a Caveat under the circumstances stated.

"J. H. H., of Ala."—We forwarded the "Architect" at the time specified, and your paper is sent from this office regularly every week. We do not understand the delay.

"R. R. S., of Ky."—Your letter has been received, and is perfectly satisfactory.

"L. B., of Ala."—We have written Mr. Bowden in regard to your model, and will advise you concerning it when we hear from him. The drawings referred to came safe.

"E. T. F., of Va."—The Philosophical Magazine is published in London. We do not think it is for sale here, but Mr. John Wiley, of this city, can import it for you. $3 received.

"J. M., of Bytown, C. W."—We have been advised by Messrs. J. M. Harvey & Son, of Amsterdam, N. Y., that they are prepared to furnish shoe peg and pail machinery. By addressing them you can obtain the full particulars.

"A. W. B., of Pittsburgh."—By reference to the note addressed to J. M,, above, you will find an answer to your enquiry in regard to shoe peg machinery. The best route to California is across the Isthmus, departing from here by steamer. We think water power is to be obthere in abundance.

"A. N. P., of Geo."—We have handed your letter over to responsible parties for attention. $2 received.

"J. M. H., of Miss."—We have no specimens to send you.

"C. A. H., of N. H."—We know of but one method of making an oval rotary motion; the outside radius revolves, touching all parts of the oval.

"J. W. C., of Ill."—Oliver Evans constructed a vibrating Engine more than 40 years ago, and they have been in use ever since, more or less. You can make one, if you choose. We can give the price of them, as they are much used here, if we knew the size.

"X. Y. Z., of Ohio."—We do not think that the phosgene gas is patented. C. Fuller, Greenwich street, this city, makes it; think it is a composition of alcohol and camphene distilled together. $1 received, and credited for 6 months.

"E. J. C., of R. I."—Your incomplete set of vol. 4, would be of no use to us, as we should not be able to complete it. If we should attempt to expose all who sell patent receipts, it would make more business than we could attend to at present.

"B. A. W., of N. Y."—You had better forward us a model of your water wheel, for examination. We can then better advise you as to its patentability. Could you not find some neighbor who would furnish you with funds to patent it with, and retain an interest in the invention? This is sometimes done.

"E. F. B., of N. J."—You had better write to the inventor for information concerning the frame of the Lathe, and we have no doubt you would succeed well. See the Engraving also. We do not know of any slide-lathe, second-hand, such as you speak of, for sale.

"B. F. S., of Vt."—We have given the drawing, a careful examination, but we do no think it sufficiently novel to warrant you in applying for a patent. We could not institute a claim which would be granted, and we advise that you proceed no further.

"S. & S., of Ohio."—We should have written you before, but had nothing to communicate. Please notice that we have not forgotten you. The subscribers' names have all been entered, and we trust that you will attend to the matter promptly for us. Ranlett's Architect, can be sent by mail.

"H. K. N., of Pa."—We can see no reason why you should not receive a Patent for your improvement, according to your statement you have hit upon an excellent plan.

"W. K., of Ala."—The tanner's key referred to, cannot be obtained in this city. The hydrometer can be purchased of B. Pike, this city. $1 received and credited.

We have received from the discoverer, an article on a new way to determine by the laws of motion, the mean distance at which gravitating bodies revolve around each other. It will appear next week.

We have a number of communications which we will answer next week.

Money received on account of Patent Office business, since Jan. 31, 1850:—

P. R. M., of Mass., $315; S. A. P., of Ct., $30; S. K. G., of N. Y., 20; R. Z. S., of La., $60; C. C. C., of Vt., $25; W. T. C., of N. C., $30; L. A., of Ct. $30.

Notice to Capitalists.

We are authorized, by a company in the State of Ohio, to call the attention of those interested in the manufacture of flour and woollen goods, to the sale of a large and well established concern in one of the best regions of that great State. The ill health of the partners compels them to retire from business.—The full particulars in relation to the above property, may be had by personal application to the subscribers, or by letter, post-paid, to the publishers of this paper. We are assured that this property is very valuable, and offers great inducements to any company who desire to make a profitable investment. Terms will be made easy.

Back Volumes.

We are no longer able to supply Vols. 1, 2 and 3 of the Scientific American. We have on hand about 50 copies of the 4th, Volume bound, price $2,75, if any of our subscribers are intending to order a copy, they had better do so without delay.

Notice

Whenever any of our friends order numbers they have missed—we shall always send them, if we have them on hand. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

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American Steam Engine, Plate and Book of Description	3,00
Scribner's Mechanics, Tuck, Gilt,	1,50
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Leonard's Mechanical Principia,	1,50
Mahan's Civil Engineering,	3,00
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Patent Office.

128 FULTON ST.

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THE GRAEFENBERG MANUAL OF HEALTH.—The Manual of Health just published by the Graefenberg Company, 7 parts, 300 pages, 12mo. This is the most useful and comprehensive, as well as the cheapest medical work extant, and should be in the hands of every family. Part 1st contains an account of the different medical theories of the present day, both good and bad, and their relation to the health of the community. Part 2d presents a new doctrine: The Americo-Graefenberg System, which need but be understood to command the confidence of the whole community. Part 3d describes the causes, symptoms and treatment of almost every form of disease, including those diseases peculiar to females and children, useful to all classes, even to physicians, as a hand-book. Part 4th contains important directions for preserving health, &c. Part 5th, Hints for Nurses, treatment of persons recovering from sickness, cookery for the sick, &c. Part 6th, Domestic remedies described, including mode of raising and preserving medicinal roots, &c., making lotions, poultices, colognes, cosmetics, &c. Part 7th contains a collection of useful tables, recipes, &c. For sale at the office of the Graefenberg Co., 50 Broadway, and by booksellers generally. Price 50 cents. Liberal discount to dealers.

NOTICE TO POSTMASTERS.—As it is the wish of the Company to distribute this work extensively, any Post Master forwarding $2 for four copies shall be entitled to one copy gratis.

FOR $275.—WE WILL SHIP TO THE first one who will send us $275, a large 2d hand SLIDE LATHE, 16 feet long and swings 50 inches.—It weighs about 6,000 lbs. It has not been used to exceed six months. It cost when new $500 without the tools. The Company having failed soon after they put it into use, and we purchased it of the assignee for the above sum, with a view to a job of large heavy job-work that we afterwards declined to take, and it being larger than our present business requires, is the reason we now offer it at the price we paid. It has the overhead pullies all complete, with a large slide rest, 2 boaring arbors, 3 boaring heads with nutt and pullies ready for use.

Also, the one who is first in sending us $100, we will send him a first rate Bolt Cutter, which has not been used but little. It has 3 setts of dies for screws, and 1 sett for nutts, 6 caps with overhead reversing pullies. It will cut 1200 3-4 inch bolts in ten hours.

Also, now in store 12 first quality Slide Lathes 8 feet long, swing 16 1-2 inches, weighing 1150 lbs., for the small sum of $125 each. Other Lathes for sale as heretofore advertised in this paper. For particulars address SCRANTON & PARSHLY, New Haven, Ct., Post Paid. 19

SECOND HAND STEAM BOILER FOR SALE.—The subscribers have each two Cylinder Boilers, which they offer for sale—one pair is 22 feet long and 21 inches diameter; the other 24 feet long and 20 inches diameter. They are now in use and in perfect order—have not been burned or strained. The connecting pipes, try and stop cocks, &c., will be included. Ready for delivery next Spring.—Price $250 per pair, in cash or approved notes. Letters of enquiry, (post paid) to either of the undersigned, will meet attention. EDWARD WILBUR,
M. A. HARRINGTON.
Albion, Orleans Co., N. Y., Jan. 25, 1850. 21 4*

EWBANKS' REPORT NOW PUBLISHED.—Report of the Commissioner of Patents, for the year 1849.—Part I.—Arts and Manufactures; embracing the Commissioner's view of the
Origin and progress of Invention;
The Motors—Chief Levers of Civilization.
Proposed application of the Patent Fund: 1. Publication of Specifications: 2. Preparation of a General. Analytical and Descriptive Index of Inventions; 3. Institution of National Prizes; and on the Propulsion of Steamers. With an introduction by Horace Greeley. Price 37 1-2 cents.
J. S. REDFIELD, Clinton Hall.
For Sale at the Scientific American Office. 21 4*

MACHINE BELTING.—The mineral composition belting having been fairly tested, is offered with confidence as being as good as leather, and much better than any other kinds of belting—the price is less than that of any other kind—say for No. 3—4 inches wide, 14 cents per foot—6 inches, 20 cents—12 inches, 47 cents—20 inches, 80 cents—for No. 2 which is stouter—3 inches, 12 1-2 cents—7 inches, 29 cents—13 inches 67 cents—intermediate and larger sizes in proportion. Orders enclosing cash will be filled at once by S. C. HILLS, machinery agent, No. 43 Fulton Street, N. Y., who buys and sells on commission, all kinds of machinery, and has for sale Steam Engines, Boilers, Lathes, Planers, Drills, Pumps, Johnson's Shingle Mills, Sawmills, Morticing and Tennoning Machines, &c. &c.—Letters must be postpaid. 20 4t

PATENTS.—THOMAS G. CLINTON, OF the firm of Clinton, Knight & Brother, Solicitors for Patents, Cincinnati, Ohio, leaves for Europe by the steamer of the 6th of February. Any commissions in regard to Inventions or Patent business in Great Britain, France, Germany or Continental Europe generally, which may be entrusted to his care, will meet with his best attention. Communications may be directed to him in Washington till the 25th January, and to Boston till the departure of the steamer, or they may be sent to Clinton, Knight & Brother, Cincinnati, Ohio, for forwarding to him. 19 4t

ECCENTRIC & CONCENTRIC LATHE. We have on hand a few of Alcott's celebrated Eccentric and Concentric Lathes, which the inventor informs us will execute superior work at the following rates:—

Windsor Chairs, Legs and Pillars,	1000 per	11 hours.
Rods and Rounds	2000 "	"
Hoe Handles,	800 "	"
Fork Handles,	500 "	"
Broom Handles,	150 "	"

Also various other work in the same ratio. It will turn smooth over swells or depressions of three-quarters to the inch. The Eccentric Lathe will do work as fast and better than any other machine, and are sold without frames for the low price of $25—boxed and shipped. Address, (post paid) MUNN & CO.
14tf At this Office.

TO RAILROAD COMPANIES, ETC.—The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other Spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

Made of different sizes to suit the purchaser.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to C. LIEBRICH,
18 10* 46 South 8th St., Philadelphia.

LAW'S NEW PLANING MACHINE—For boards and plank, is now in operation in this city—planing, tonguing and grooving at the same time, with rapidity and beauty. It is believed to be superior to any other machine, as it will do the work of two or three rotary machines, and for all Southern, and the majority of Northern lumber, the execution is much better.

Machines, with rights for States, or Counties, can be had by applying to the subscriber, at 216 Pearl street, or at Collyer & Dugand's mill, foot of West Fourteenth street, where the machine is at work.
2 tf H. LAW.

BRITISH PATENTS.—Messrs. Robertson & Co., Patent Solicitors, (of which firm Mr. J. C. Robertson, the Editor of the Mechanics Magazine from its commencement in 1833, is principal partner,) undertake THE PROCURATION OF PATENTS, for England, Scotland, Ireland, and all other European Countries, and the transaction, generally, of all business relating to patents.

Instructions to Inventors can be had gratis, on application to Mr. THOMAS PROSSER, 28 Platt street, New York; as also the necessary forms of Petition and Declaration for British Patents.
PATENT OFFICE,
m1 tf 166 Fleet street, London.

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LAP WELDED WROUGHT IRON Tubes, for Tubular Boilers, from 1 1-4 to 7 inches in diameter.—The only Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France, and Germany, for Locomotive, Marine and other Steam Engine Boilers.
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ADEE'S AMERICAN CAST STEEL Works, (at the foot of 24th st., E. River, N. Y.) The above works are now in successful operation, and the proprietor would respectfully call the attention of machinists and all consumers of the article to an examination of his Steel, which he is warranted by the testimony of the principal machinists and edge tool makers of this city, in recommending as fully equal in every respect to any ever used in this country.

A full assortment of the different sizes constantly on hand, which the public are respectfully invited to call and examine at the office of DANIEL ADEE,
51 6ms 107 Fulton street, New York.

CAMERA LUCIDA.—Notwithstanding the demand for these useful instruments has been so great, we are yet able to supply orders for them.

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Just received, a new and more beautiful article than has before been offered for sale in this country.

Address MUNN & CO., at this office. Price $6, boxed and shipped where directed. 3tf

TO PAINTERS AND OTHERS.—Quarterman's Chemical Oil Stove Polish, American Atomic Drier, Electro Chemical graining colors, and gold size. The stove polish is put up in tin boxes of 12 1-2 to 31 1-4 cts. Sold wholesale and retail at 114 John st., New York, by
QUARTERMAN & SON,
8 3m* Painters and Chemists.

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Scientific Museum.

For the Scientific American.

On Tanning Leather.—Preparation of Hides.

(Continued from page 160.)

TAWING, CURRYING, AND LEATHER DRESSING.

CURRYING LEATHER.—The common mode of currying leather for shoes, boots, &c., consists in first softening the hides, as they come from the tan-pit, by soaking them thoroughly in water; they are then placed on a polished beam with the flesh side outwards, and pared with a broad sharp knife, till all the inequalities are removed and it is reduced to the required thinness. They are then again rubbed and washed with a polished stone and, while still wet, are besmeared with currier's oil, generally fish oil, or a mixture of this with tallow, which renders them much more impervious to moisture, and proper to protect the feet against the inclemency of the weather.—They are afterwards hung up to dry, by which the moisture is evaporated, but the oil, which cannot be dissipated by mere exposure, gradually takes the place of the moisture, and penetrates deeply into the pores of the leather. It is then dried either in the sun or in a stoved room.

Blackening the leather is also a part of the currier's business, which is done on the grain side simply by rubbing it with an iron liquor, but on the flesh side with a mixture of lampblack and oil.

Common boot leather, as usually prepared, is, however, still, in some degree, pervious to water, by long exposure to wet, and for this reason fishermen, wild-fowl shooters, and those whose employment or amusement leads them to be long on wet ground, usually prepare their boots with an additional dressing of some oily or viscous matter.

SHAMMOYED LEATHER.—This is generally prepared from sheep or does' skin prepared in the way already mentioned, by dressing, liming, &c., and dyed if necessary, and then finished with oil. This forms the common wash leather, breeches leather, &c., and is the only kind which, when dyed, will bear washing without the coloring being materially injured.

We add the following particulars relative to the manufacture of some of the most remarkable kinds of leather prepared in foreign countries, which although in most respects closely resembling ours, have distinct points of difference.

REAL MOROCCO LEATHER.—The process for the preparation of this leather from the goat-skins at Fez and Tetuan, is thus described by M. Broussonet :—The skins are first cleansed, the hair is taken off, limed, and reduced with bran, nearly in the way already described for the English Morocco leather.—After coming from the bran they are thrown into a second bath, made of white figs, mixed with water, which is thereby rendered fermentable, in which they remain four or five days, and they are then thoroughly salted with salgum (or rock-salt) alone, in lieu of the salt and alum; after which they are fit to receive the dye, which, for the red, is cochineal and alum, and for the yellow pomegranate-bark and alum; the skins are then tanned, supplied with a little oil, and dressed.

RUSSIA LEATHER.—Much excellent leather of every kind is prepared in different parts of the Russian Empire. The preparation of the fine Russian leather, so well known for its quality and for its peculiar smell, is described at large in Mr. Tooke's "View of the Russian Empire," to which we must refer the reader for the minutiæ of the processes. The hides are first put into a weak alkaline ley to loosen the hair, and then scraped on a beam; then (if calves) are reduced by dog's dung and a sour oatmeal drench, and tanned with great care and frequent handling; the bark used here is seldom oak, that of the black willow being preferred; but if this cannot be obtained they use the birch bark. They are then either dyed red or black, these being the two colors most esteemed. For the red the hide is first soaked in alum, and then dyed with Brazil wood, and the black is given as usual with an iron liquor. The leather is then smeared with birch bark, which gives the peculiar smell so much prized, and which, when used for bookbinding, has the valuable property of protecting the book from worms. The streaked or barred surface is given to the leather by a very heavy steel cylinder wound round with wires.

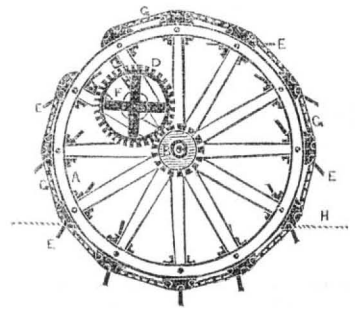
History of Propellers and Steam Navigation.

[Continued from page 160.]

PAUL STEENSTRUP'S PADDLE-WHEELS.

The form and full size of the paddle-wheels are a parallelogram, 1 foot deep, by 2 feet wide, terminated by a semicircle of 1 foot radius. These paddles are not immoveably fixed, but turn on axes passing through the two opposite annular plates that form the periphery of the wheel, in order to allow of their dipping into the water edgeways, and thereby reduce the resistance of the water to the revolution of the wheel.

FIG. 21.



This Figure represents a side elevation of the wheel, with the paddles viewed edgeways.

A represents the paddle-wheel, B a cog-wheel bolted to the vessel's side, concentric with A and allowing the shaft C of the paddle-wheel to revolve in its centre; D a cog-wheel, double the diameter of B, revolving upon an axis supported by the arms of the paddle-wheel, and gearing into B; E the paddle, suspended by axles turning in the rim of the wheel; on each of these axles is fixed a chain wheel F, and a similar wheel is fixed on the axis of the cog-wheel D; G is an endless chain, passing over the wheels F, on the periphery of the paddle-wheel, and under the wheel F, on the axis of D; H represents a water line.

It will now be perceived that when the paddle-wheel is set in motion, the toothed wheel B being fixed, causes the large-toothed wheel D, to revolve upon its own centre, at the same time that it is carried round by the paddle-wheel, in a manner similar to the sun and planet wheel, in Watt's steam engine. The wheel D, being double the diameter of B, will perform one revolution upon its own axis, in the same time that it is carried round once by the paddle-wheel; and by means of the endless chain, passing under the small wheel F, on its axis, will cause each paddle to revolve once in its axis in the same time; and each paddle is constantly directed to the highest point in the rim of the wheel.

This wheel was patented as far back as 1828, and its very complexity is enough to condemn it at a glance. It is a most astonishing thing, how some people to remedy an evil, adopt another of far greater magnitude. A wheel of this description was exhibited in 1848, and 1849, at the Fair of the American Institute. It surely was not chosen as a subject of exhibition because of its utility. For complexity and utter impracticability, it was an ingenious invention: and, if these are qualities to recommend any thing, it surely deserves the highest eulogiums.

Wooden Books.

Mr. Vattemare proposes specimens of our forest trees in the form of books. In a collection of the kind at Warsenstem, near Cassel, the back of each volume, is formed of the tree, the sides are constructed of polished pieces of the same stock, and when put together a box is formed, inside of which is stored the fruit, the seed and leaves, with the mass which grows upon the trunk, and the insects which feed upon the tree. Every volume corresponds in size, and the collectional together, as may well be imagined, has an excellent effect.

The bullion in the Bank of England now amounts to upwards of seventeen milions, the largest amount held by the Bank since 1844.

Hail.

This article, with a few alterations, we extract from that excellent work, the "Iconographic Encyclopedia," a notice of which we have give n.

HAIL, one of the most peculiar phenomena in meteorology, is divisible into two principle classes: 1st. *Sleet*, composed of round granules, generally not more than two and a half lines in thickness, always opake, and of snow white color, occurring in wintry weather. 2d. *Hail*, properly so called, consisting of granules of spherieal, parabolical, or pyriform shape, varying in size from a cherry stone to a walnut. These have generally a point, opposite to which is a hemispherical segment, and in their centre is an opaque nucleus of one half to two lines in diameter. This species occurs generally in summer, in connexion with thunder and lightning. The two kinds however, according to Kaeintz, differ only in size. As a third and rare species, Arago considers that kind which are transparent, which are unquestionably produced by the freezing of drops of rain falling through a strata of colder air.—The form of *hail stones* is very various. The diameter of simple hail stones, at a mean latitude, according to Muncke, is not over one and a half inches, larger masses appearing to be produced by the aggregation of several. There are instances of hail stones being as large as hens' eggs. [We have seen them.] There are cases on record of vastly larger ones, but most of these are fabulous. According to Wallace, pieces of ice a foot thick fell in the Orkneys in 1780. In 1802 a piece of ice fell in Hungary, which was nearly a cube of three feet. In all these cases, the mass of ice must have been an aggregation of small lumps frozen together. In 1755 the hail fell in Iceland mixed with volcanic ashes, and in 1821 in Ireland, mixed with the sulphuret of iron. Hail generally falls through the day, but sometimes at night also. Smaller hail stones generally fall in spring: short showers of rain then alternate with sunshine. Fine granular hail frequently occurs on high mountains; on the higher Alps there are generally twelve falls of the fine for one of regular hail stones.

The real hail stones belong to the summer season, and are accompanied by severe thunder and lightning. Storms of this kind generally arise after clear calm weather, accompanied by long oppressive sultriness. The hail clouds appear to sweep low, with their edges jagged and their lower faces presenting irregular projections, the parts yielding hail generally forming very white streaks, the rest of the cloud being very dark. The barometer and thermometer sink rapidly, and a peculiar rustling in the air announces the hail cloud, and afterwards a darkness like an eclipse takes place. The hail lasts but a short time, rarely over 15 minutes, but which in that short time sometimes produces terrible effects. Hail storms move with great velocity, sometimes at the rate of 40 miles per hour. Men have been killed by them, and not unfrequently smaller animals. A hail storm occurred in France, in 1788, which devastated 1039 parishes, and caused the loss of more than 25,000,000 of francs. The area travelled by hail, is generally narrow, rarely over a mile, but its length is sometimes very great. In the tropics hail seldom occurs except on the mountains, and at the far north, large hail is seldom seen. The hail tract is generally confined to the region between 30° and 60° latitude, and to elevations under 6000 feet. Even within these limits there are countries where there is but little hail—such as in some of the valleys of Switzerland. In the low lands at the foot of high mountains, hail is more abundant at a certain distance from the mountains. There appears to be no regularity in hail storms.—Many plans have been tried to prevent hail storms, but none have been successful. Electric conducting rods were tried in 1776, by Guenaul de Mountbeillard, and in 1820 Thollard recommended hail conductors made of straw ropes attached to pointed rods, or of straw ropes with a metal wire interwoven. These methods were much followed without the least benefit flowing from them, and at the present day most meteorologists agree that there is no certain or practical method of preventing hail storms.

LITERARY NOTICES.

We have upon our table Nos. 1 and 2 of the AMERICAN HISTORICAL MAGAZINE, published monthly by L. Labree. 83 Nassau St., at $2,00 per annum. We observe by reference to the prospectus of this work, that its design is very extensive and useful. It is devoted to the annals of the different States of the Confederacy—the statistics and romance of American history—contemporary facts worthy of preservation—reports of Historical Societies, &c. We have carefully examined the two numbers that have been issued and have no hesitation in giving it our unqualified commendation. And we hope (as we doubt not it will) that a generous encouragement will be extended to the publisher in his efforts to serve the public with a valuable work.

SARTAIN'S UNION MAGAZINE for February, Dewitt and Davenport, N. Y. Contains a beautiful mezzotint engraving of Benjamin West's first effort in art. The subject is well selected. Beside this it has a portrait of Mrs. Polk, wife of the late Ex-President, and a long line of interesting illustrations and sterling matter, which cannot fail of pleasing every lady of good taste. This number fully maintains the high standard of the Magazine.

PETERSON'S LADIES' NATIONAL, for February, as might be expected, maintains its high character for originality and readableness. "The Truant" is a pretty picture, by Gimber. This number contains seven full page embellishments, and an excellent table of contents, from popular authors. Our readers will bear in mind that this Magazine is published for $2,00 per annum.

HOLDEN'S DOLLAR MAGAZINE, February No.: W. H. Deitz, Publisher, N. Y. The number before us contains an excellent engraving of "Starrucca Viaduct." The portrait and biographical sketch of Thos. Convin, of Ohio, together with a likeness of the poet Wordsworth, the truthfulness of which we cannot vouch for. This magazine is conducted with much spirit and energy, and the small price for which it is furnished, brings it within the reach of every family.

GRAHAM'S MAGAZINE for February, appears upon our table, through the politeness of our friend Wm. H. Graham, Brick Church buildings N. Y. The engravings are rich and numerous, and the matter as usual entirely original, fascinating, and well arranged. This magazine enjoys a large share of public favor, and has attained it by no servility or ungenerous attempts to ride down contemporaries. Bear away Graham your path is full of flowers.

SPECIMENS OF THE STONE, IRON AND WOOD BRIDGES OF THE U. S. RAILROADS.. Illustrated by plans, sections and details, from actual measurement of the work, with the bills of timber, iron, &c., showing the cost of each structure. By George Duggan, Arch't. and C. E. Published monthly and to be completed in 12 parts, at 75 cents each.—As this work is supplied to subscribers only, those wishing to possess it should forward $5 to Munn & Co.,—the remainder, $4,to be paid in 6 months.

GODEY'S LADY'S BOOK, for February, H. Long and Bro., New York. This number is an excellent one richly embellished, and filled with choice matter, as usual. Godey appears at full length in this number, and is really a "dapper" looking fellow.

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